

Marine Corps Gazette

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COVER



Necessity for cold weather training was emphasized on the icy slopes of North Korea back in November 1950. Today, although hostilities are at an end, a steady stream of FMF personnel still passes through the rigorous course at the Cold Weather Training Battalion, Pickel Meadows, California. For, with the years has come the realization that although yesterday's banana wars may have been fought in the tropics, today's campaign might be fought in a sub-zero arctic—the Corps should be ready to go either way. The Cover was made from an Ectachrome transparency shot by Pfc Richard S. Kantorowski at Pickel Meadows.

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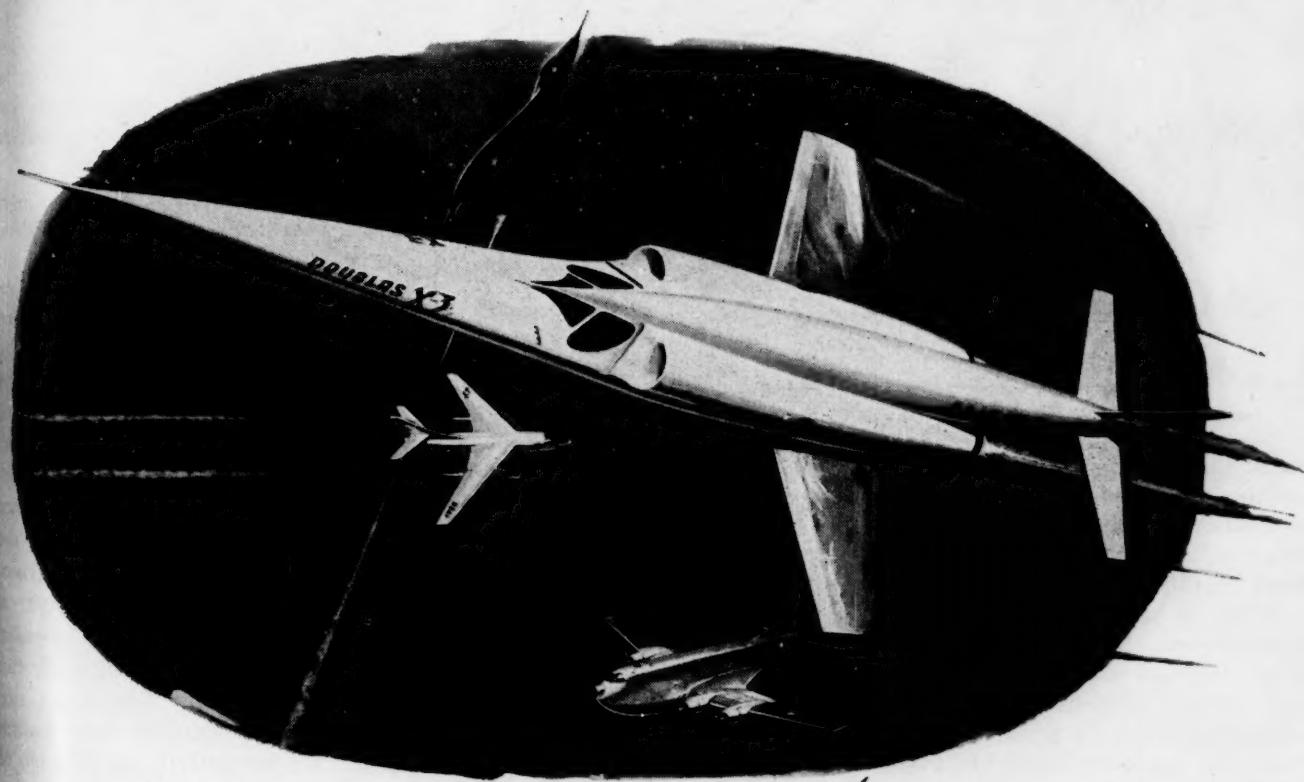
What is the ideal wing planform? Obviously, there can be no all-inclusive answer, for wings—like power plant or size—are designed to meet certain specific tactical requirements.

Thus a sweptback modified delta lets the Douglas F4D Skyray, first carrier plane to hold the official world speed

record, come in slow for carrier landings. The broad conventional wings of a Douglas C-118A Liftmaster contribute to the range and lift a cargo carrier needs—while the Navy's carrier-based A3D Skywarrior bomber flies at near-sonic speed on sleek, tapering, sweptback wings. Again, the experimental stiletto-

shaped Douglas X-3—though bigger than a DC-3 transport—has a wingspan smaller than a DC-3's tail.

Correct design of airframes to meet intended use contributes to Douglas aviation leadership. Building planes to fly farther and faster with a bigger payload is a basic Douglas concept.



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message center

Hot!!

... Every so often someone, in a burst of National pride and patriotic passion, lets it be known that ours is the "richest nation in the world," at least by our own standards.

Why is it, I wonder, that "the richest nation in the world" is content to send members of its armed forces to tropical climates, subtropical climates and Camp Lejeune, garbed in summer uniforms that are comfortable only late at night, when they're hanging up . . . ?

world — while we work, let's dress according to the dictates of climate — saving more formal attire at least until the dinner hour and the comparative cool of evening.

JOSEPH P. B. FRANKLIN
Capt, USMC

Honolulu, T. H.

Cold! (Rough in the Field)

... In reading the June issue of the GAZETTE, I read an article in the Message Center column in regards to the pyramidal tents. Sgt D. P. Webb has an excellent idea. . . .



In the meanwhile, our "less fortunate" British cousins, European and Asiatic counterparts are decked out as befits the season, in short-sleeved, open collar shirts and, in some cases, knee length shorts.

What is so unmilitary about a short-sleeved, flare collared khaki shirt, complete with military pockets and service ribbons attached? A short-sleeved shirt is neither impractical nor unconventional. It looks far better than a standard type of shirt (meant to be worn with a tie) worn open at the neck—a trick hardly worthy of the wealthiest nation. Let's join the sane people of the

I would like to submit an idea for squad tents at present in use in Korea. As for painting the inside of this type of tent white, it is unnecessary because the white liner is standard equipment for the tent and serves its purpose. My idea is to make a standard insulation for winter. This insulation could either be of felt or some other material that keeps out the cold and could be cut with a knife.

Last winter our tent was pretty comfortable. But when we de-winterized the tent it had boards, cardboard and other heavy material to keep out the cold.

Now if there had been a fire and the doors were blocked with flames, a person couldn't cut his way out, on account of the boards and heavy material used to insulate tents in Korea at present.

They collected all this material and took it away this summer. Now we are starting to winterize our tents for the winter and we are having a heck of a time finding lumber or cardboard, etc., to insulate the sides of our tent. Lumber is very scarce here.

If we don't insulate them, our stoves are not adequate to keep us warm in this cold climate.

But if there was a standard insulation that came with the tent when it was issued, all this . . . hardship would be eliminated.

In the summertime, our mosquito nets are adequate. The insulator could be rolled up like the flaps of the tent in the summer.

SERAFINO GUIDO
MSgt, USMC

Korea

Potpourri

... First, to the "Ed" who commented on the letter by LtCol W. D. Patterson, Jr., in the October issue — that comment symbolizes, to me, the attitude of mind which fosters eventual success. May we never forget it!

Second, your recent articles slanted toward aviation have been, in general, interesting and thought provoking. Please keep them coming. (We can, only if aviator authors keep writing them. ED)

Third, the comments on author Major George Hanna, October issue, illuminated a perpetual shortcoming of many Marines. The "ground-stomper" should know what Major Hanna's *Clean Dish* is. And the "flyboy" should have at least equivalent knowledge of such concepts as Major Simmons' *Magic Square*. Along with other remedies for this deficiency, Captain Gunning's suggestion in the October issue sounds practical; particularly in this age of evolution of new tactics and weapons.

R. L. PARNELL, JR.
Capt, USMC

Monterey, Calif.



"If he'd only call her up..."

"I'm sad, too, when she's upset. If he'd only call her up everything would be all right. Just one little telephone call can save so much time and worry."

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JR.

er, 1954

A Neat Package

... The article *The Magic Square* came like a pleasant breeze and wrapped up in a neat package the thoughts on organization many of us have had for a long time. Our FMF units have grown in size and complexity of administration and management until they remind one of a super deluxe automobile that has so many gadgets it has overwhelmed the driver. He is so busy with the dashboard pulling knobs and pushing buttons, he can not keep his eyes on the road.

Along with the adoption of a square organization let us stress tactics that consider the "exhaustion factor" by effecting more frequent reliefs of the two outfits forward by the two in reserve, thus eliminating the all too familiar hollow-eyed zombies who are too fatigued to think, fight effectively or even duck the bullets. You can make greater demands and get more efficiency out of fewer troops forward if, when they are bushed, they can become the troops in the rear. A square or-

ganization is particularly adaptable to employment that keeps fresh troops punching. The overloaded, all purpose, triangular organization (and this also goes for the makeup of BLTs and RLTs), does not always provide for the most proper and economical employment of supporting weapons, i.e., the AT company tanks standing idly by, while the regiment fights up in the mountains, could be much better employed supporting the regiment over fighting up the valley on the left.

The expanding size of FMF units brings to mind the picture of a big game hunter who has provided for all eventualities.

LOREN E. HAFFNER
Col, USMC

Hawaii

... Having just finished reading Major Simmons' article on revamping the FMF units, I find that it is in consonance with many articles you have recently published and also at variance with some opinions others of us hold.

By placing an LMG squad in the

rifle platoon, in place of the third squad, he is providing a base of fire which is incapable of providing continuous support in that it has no provisions for displacement. The rifle squad of three fire teams has this capability.

The statements that certain lower echelon tactical organizations are always the same, is subject to debate. If organization for each situation is identical, then it is a sad commentary on the ingenuity of our company commanders.

The elimination of the regiment in combat reduces flexibility and increases the "span of control" of the brigade commander. In the proposed set-up the CG must directly control four to six infantry battalions, three or more artillery batteries (and possibly battalions), plus tanks, engineers etc. In fact, in such a brigade, the commander would have more units to control than does a present division commander. The regimental formation, in fact, relieves the span of control problem for the CG.

F. D. SINGER
Capt, USMC

Rochester, N. Y.

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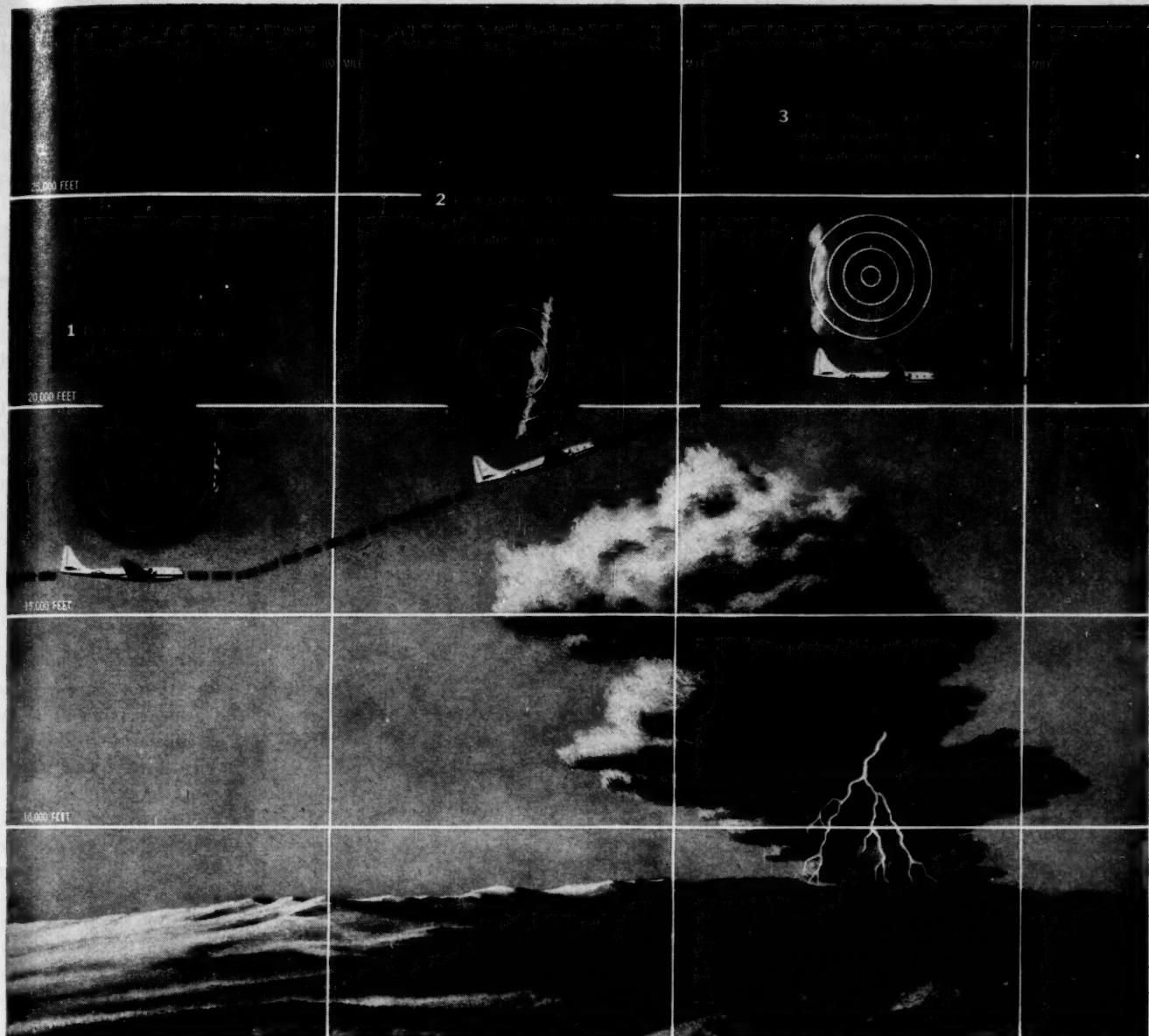
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tion if the leader must make every decision. The non-commissioned officers in charge of the various attached sections, squads, etc., should know more about their weapons and employment than the rifle platoon or company commander. All the commander need do is to direct what is to be done, not how! The "how" is the problem and prerogative of each appropriate subordinate and should be left to him.

We speak and write much about the responsibilities of command at all levels, but apparently little on the manner of discharging them. I would suggest to the Major that his rifle platoon and company commanders exercise their command through their subordinates by directing what, but not how.

W. F. FRANK
LtCol, USMC

Washington 25, D. C.

It All Counts etc, etc

... The GAZETTE October Message Center carried a letter from a master sergeant which presented for discussion the matter of three additional pay grades for master sergeants. He mentioned the condition of five years service in each grade before consideration for the next grade. In some MOS fields there might be a possibility of having 15 or 20 years left to do on 30 after making master sergeant—if so, he might consider the ranks of WO and CWO.

Personally, I would consider myself lucky to make master sergeant in 30 years. I completed my 20th year June 13 of this year. Back in the Old Corps (famous last words) there were many 30-year privates but in today's Corps I am one of the few 20-year staff sergeants.

WILLIAM T. STROUD
SSgt, USMC
Santa Ana, Calif.

Add Weight and Height

... When screening large numbers of service records for personnel who must meet several minimum requirements, in the event height and weight is a factor, it becomes necessary to repeat the process by screening the same number of health records, thus doubling the work.

I believe height and weight of the individual could be included on page one of the present service record, under "Miscellaneous Informa-

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tion." It would save field commands enough man-hours to justify the change.

F. J. FEELEY
MSgt, USMC

Los Angeles, Calif.

Stumping the "Expert"

... In a required college course at a certain Western University, it was customary to set aside one lecture and invite an expert in to discuss firearms safety.

The "expert" in this instance turned out to be a 20-year-old ROTC captain. Duly impressed and with an over inflated ego, the cadet pompously explained the intricacies of an M1.

At the end of the lecture he requested the 30 odd students to come up and operate the rifle in order to familiarize themselves with the standard safety practices.

Shortly after, the instructor-cadet noticed a downy cheeked lad sitting two rows back, who had apparently not yet handled the demonstration rifle.

In a rather feeble attempt at hu-

mor, the "expert" called out.

"Here fellow, come on up and operate the action on this one. Don't worry — it won't bite."

Obviously anticipating a few laughs, he paused a second or two, and then continued.

"Had any experience with firearms yet?"

The boy stood up and replied,

"... A little. Seven months as a Marine in Korea. ... I have two Purple Hearts."

ARTHUR J. ROTH
New York, N. Y.

Standardization

... I have a suggestion for the wearing of collar ornaments on the uniform shirt.

The shirt can be marked on the underside of the collar, with two small dots where the prongs of the collar ornaments should come through the shirt. These dots would not be visible when the shirt is worn without the ornaments and it would make for more standard spacing of the ornaments by individual wearers.

This marking could be done dur-

ing the manufacture of the shirts. Shirts now in the hands of individuals could be marked by those individuals. An enterprising platoon sergeant could insure correct marking by making a template to be used for marking.

CHARLES J. ALLEN
MSgt, USMC

San Diego, Calif.

Recruit Potential Evaluation

... Standardize the Marking System, September GAZETTE, has me confused. Is it intended to standardize only recruit markings or markings throughout the Marine Corps? I do not feel that the marking standards can be the same. Recruit evaluation is unique due to the "unusual" circumstances surrounding recruit training. I agree that all recruits are not equal, but how many recruits, during training, commit any serious offense or are other than "... sober and obedient?"

An evaluation sheet for a Marine being transferred to his first duty station following recruit training would mean little since such duty

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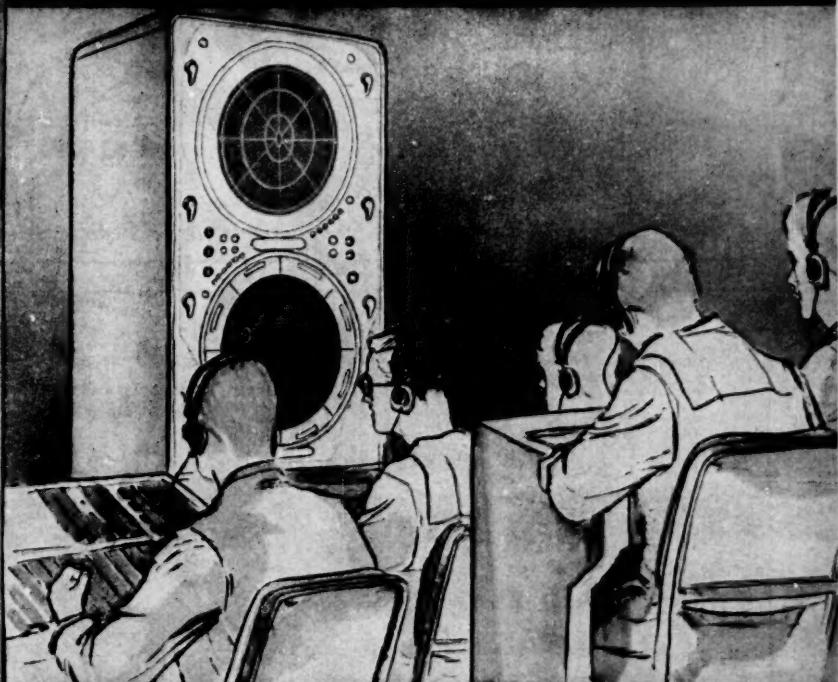


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assignments are seldom of a "key" nature.

Since HQMC requires no fitness reports on corporals and sergeants who command fire teams, squads and even platoons, it would appear unnecessary to attempt such exhaustive recruit evaluation. Let's not waste time trying to predict, as it were, the potential of a recruit.

WINFIELD S. TUBBS

TSgt, USMC

Colorado Springs, Colo.

Incentive after 20

. . . In regards to MSgt Huggins' letter in the October issue of the GAZETTE: Sergeant Huggins has a very good idea. I also feel that something should be done for the forgotten man (paygrade E-7) if the military services desire to retain these older NCOs after they have completed 20 years active duty.

It is impossible to promote all deserving E-7s to the commissioned ranks or to W-1, consequently there is a tendency for the majority of men to ease off after they acquire the sixth stripe. As an incentive for these people to keep digging and strive to better themselves the following suggestion is submitted:

Present Grade	Time in grade for promotion	Promoted to
E-7	Three years	E-8*
E-8	Six years	E-9**
E-9	Six years	E-10***

*\$20.00 increase in base pay

**\$25.00 increase in base pay

***\$35.00 increase in base pay

In the event a man in paygrade E-7 is passed over for promotion two successive times, he would be reverted to paygrade E-6, or be placed on the Fleet Marine Corps Reserve list, providing he has 19 years six months active duty.

I fully believe that the Marine Corps and all other branches of the military services would benefit by this program for the following reasons. Each individual from the time that he enlists in the service until the completion of 30 years would have the incentive to get ahead and would put forth more effort to keeping up on his respective job, and striving to get a better fitness report than the previous one.

GEORGE W. BARNES

MSgt, USMC

Bakersfield, Calif.

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• The letters a.D. behind the title "Generalleutnant" of **Fritz Bayerlein** denote that he is no longer on active service (*ausser Dienst*). The career of Gen Bayerlein is remarkable in that he was one of those rising young officers who were marked for eventual high command had not fate intervened. His service began as a private of infantry on the Western Front in 1917. In spite of the strenuous restrictions imposed on the military power of a defeated Germany, he was among the small group of professional officers which made up the German Army of that period, being commissioned in 1922. His talents and abilities came to the attention of his superiors when, from 1927-30, he was assigned as an instructor at the War College in Dresden. It was here that he learned to know another officer with whom he was to be closely associated in years to come —



GEN BAYERLEIN

Erwin Rommel. Following that he was assigned as a student at the elite General Staff School in Berlin from 1932-35. Duty as a General Staff officer with various Panzer units occupied the intervening years until the outbreak of WWII. The Polish campaign in 1939 found Bayerlein with the 10th PzDiv, then with Pz-Korps "Guderian" in France 1940. As Operations officer for Panzer-group "Guderian" in the drive on Minsk-Smolensk-Moscow, he drew on his experience to present the article on page 46. General Bayerlein first came to the attention of most Americans, and is best known as, Chief of Staff of the Afrika Korps under Rommel 1942-43. Bayerlein returned from Africa to Russia in the fall of 1943 to assume command of the 3d PzDiv. In May, 1944 he took over the Panzerlehr Div and

fought that division in Normandy and in the last forceful German effort in the Battle of the Bulge. As the foundations of the Third Reich began to collapse he took over command of the LIII PzKorps in defending his homeland in the ensuing battles for the Rhine (Remagen) and the Ruhr. When the end came in 1945, he surrendered himself and his troops to the US First Army. Thus, amid the ruins of a defeated land and for many long months as a prisoner-laborer under interrogation, his illustrious and honorable career in the profession of arms came to an end.

ED: When Gen Bayerlein sent us his manuscript he had included 15 overlays. Of these, our staff artist had to consolidate the most important phases because of space, color and mechanical limitations. Hence, the German forces are shown in red throughout. They are not as complete as a G-3's situation map, but we hope you are able to follow them. Likewise, in the interests of professional accuracy, the translation in some parts is almost literal.

• After a brief tour of duty at Quantico in 1940, **LtCol Robert L. Smith** was assigned as a platoon leader to the old 2d Engineer Company, 2d Mar Brig (which later became a Bn and then a Regiment). He served in every billet in the engineers (including battalion CO) during the war years. With this experience behind him, he felt a "strong desire to acquaint other officers with the support today's engineers have to offer them." He does so in *A New Look for the Engineers* (page 66).

Before entering the Corps in 1940, LtCol Smith received his BS in Civil Engineering at the California Institute of Technology and, in 1947, earned a BS in Electrical Engineering and Electronics at the Massachusetts Institute of Technology. He was CO of the 2d Eng Bn at Camp Lejeune from 1949 until 1951 and for three years was Chief of the Engineer Group, MCEC. He is currently as-

signed to the Armed Forces Special Weapons Project.

• If you've ever frowned at a bulletin board trying to decipher some of the Marine Corps' directives and correspondence, you're bound to agree with **Colonel Rathvon McC. Tompkins' How's That Again?** (on page 36). Colonel Tompkins was commissioned through the PLC program in 1936 after being graduated from the University of Colorado. During World War II he served with the 6th Marines at Guadalcanal and the Solomons; with the 2d Mar Div as an infantry

operations officer at Tarawa and, as CO of the 1st Bn, 29th Marines, was wounded on Saipan. In Korea he was the CO of the 5th Marines and later G-2, 1st MarDiv. Colonel Tompkins wears the Navy Cross, the Silver Star, two Bronze Stars and the Purple Heart. He is currently a student at the Naval Warfare Course, Naval War College, Newport, R. I.

• Professional interest stemming from association with the Research and Development Program for Flame Weapons during a tour at HQMC prompted **LtCol Sam H. Fletcher** to write *Flame in the Land-*

ing Force, (page 30).

After two years of schooling at both the Texas College of Mines and Texas A&M, Colonel Fletcher entered the Naval Academy. He was graduated and commissioned in 1941 and served

with the 8th Defense Bn at Samoa and Wallis Island until the end of 1942. From 1943 to 1945 he went from Camp Pendleton to New Caledonia, the Philippines and Guam. He was at the Naval Academy from 1945-47, with SerComd FMFPac, Pearl Harbor until 1948, at Quantico until 1950 and HQMC until 1953. The Colonel was CO of the 3d Ord Bn, 3d MarDiv before being assigned as an Instructor with the Tactics Section, Senior School at Quantico.

• Lieutenant Colonel Samuel B. Folsom feels that the current officer promotion system is not what it should be and suggests some changes



LTCOL FOLSOM

in *Recommended for Promotion When Due* (page 42). During WWII Colonel Folsom served with Marine aviation elements at Guadalcanal, in the Central Pacific and in the Okinawan campaign. He attended the Patuxent River Pilot's Training School in 1948 and served in Korea in 1950-51. A graduate of Massachusetts Maritime Academy, Colonel Folsom served with the Air-War Division, Naval Operations, Washington, before being assigned as Naval Attaché, American Embassy, Oslo, Norway.

• To keep our readers abreast of current politico-military events the world over we requested Colonel Francis J. McQuillen to present a briefing on Indochina. His background to the partition in Indochina may be found on page 14.

Although there are many Marine officers who have served a great portion of their time in the Far East, few have been in such sensitive billets as Colonel McQuillen. After being graduated from the Naval Academy in 1926 and with a tour in Nicaragua behind him, the colonel was in Shanghai from 1929 to '31 and again in '37.

Fluent in Chinese, he served as Chinese language officer in Peiping from '38 to '40, when he was appointed Assistant Naval Attaché at the wartime capital of Free China, Chunking.

From 1944 to '46 he served against the Japanese and in Japan itself with the 2d MarDiv. Then Col McQuillen's special talents were again called upon and he was assigned duty with the Office of Naval Intelligence in Washington.

In 1948, as the situation in SE Asia began to catalyze, he was ordered to Bangkok, Thailand representing the US as Naval Attaché—an assignment that took him in and out of Indochina many times. It was



COL MCQUILLENN

during this time that Col McQuillen had the opportunity to become thoroughly acquainted with a situation which, at the time, was remote in the minds of his countrymen.

This experience, coupling years of experience with a knowledge of peoples and terrain of Asia are presented for professional enlightenment in the article, *Indochina*.

After returning from Bangkok in 1951, the Colonel was G-2, 2d MarDiv until 1952 when he was again ordered to Washington to his present assignment as Head, Far East Section, Division of Politico-Military Policy, Office of the Chief of Naval Operations.

• While working on his Basic Officer Extension Course, MSgt Charles H. Roberts noted the plenitude of snow vehicles, but a lack of transportation for the individual.



MSGT ROBERTS

His views are expressed in *Packing In Winter Operations* (page 26). Sergeant Roberts served with the 8th Marine Regiment during the battles for Saipan, Tinian and Okinawa in WWII, as a Bn SgtMaj.

During his career in the Corps he has seen duty in China, Japan, Pearl Harbor, the Pacific and at various posts and stations in the United States. Now in his 21st year of service, he is 1stSgt of the Marine detachment aboard the USS *Salem*.

• One hot August day in Korea in 1952, a formation of Marines waited impatiently an hour or more for the Purple Hearts LtCol Brooke Nihart was supposed to present at 1st Bn, 5th Marines' CP. The Colonel at the time, was doing his best to get back and make the formation, but he had become involved in a brisk fire fight with a group of the enemy who were doing their best to make him a candidate for one of the awards he was scheduled to present.

Along with members of his staff, the Colonel had visited an outpost forward of the MLR for the purpose of making a reconnaissance for a future movement in force. On the way back, an enemy observer spotted the party and called down mortar and MG fire on them. By judicious use of a BAR and LMG, Nihart & Co moved out from under fire and movement and finally made the formation some time later—tired and dusty, but still intact. Drawing on such experiences, and others he had while commanding 1/5 in Korea, LtCol Nihart makes some speculations on what changes might be made in our tactical formations in the event a new, lightweight rifle is adopted. *More Firepower—Smaller Units* may be found on page 22. Today with his field boots temporarily in mothballs, LtCol Nihart is with the Personal Affairs Branch at HQMC.

• After serving with Marine artillery in two wars, 2ndLt Kenneth L. Smith saw the need for improvement in the defense of the artillery units. He makes his point in *Defense of the Artillery Position Area* on page 39. Entering the Corps in 1943, he served with the 11th Marines and



LT SMITH

saw action on Peleliu and Okinawa. Upon discharge in 1946, he attended the University of Southern California, majoring in Civil Engineering. After being recalled to active duty in 1950 he

again served with the 11th Marines at Inchon, Wonsan and Chosin. In 1951 he joined the I&I staff of a howitzer battalion in California. He was commissioned from MSgt in 1953 and is now with the 1st 155mm How Bn, Twenty-nine Palms, Calif.

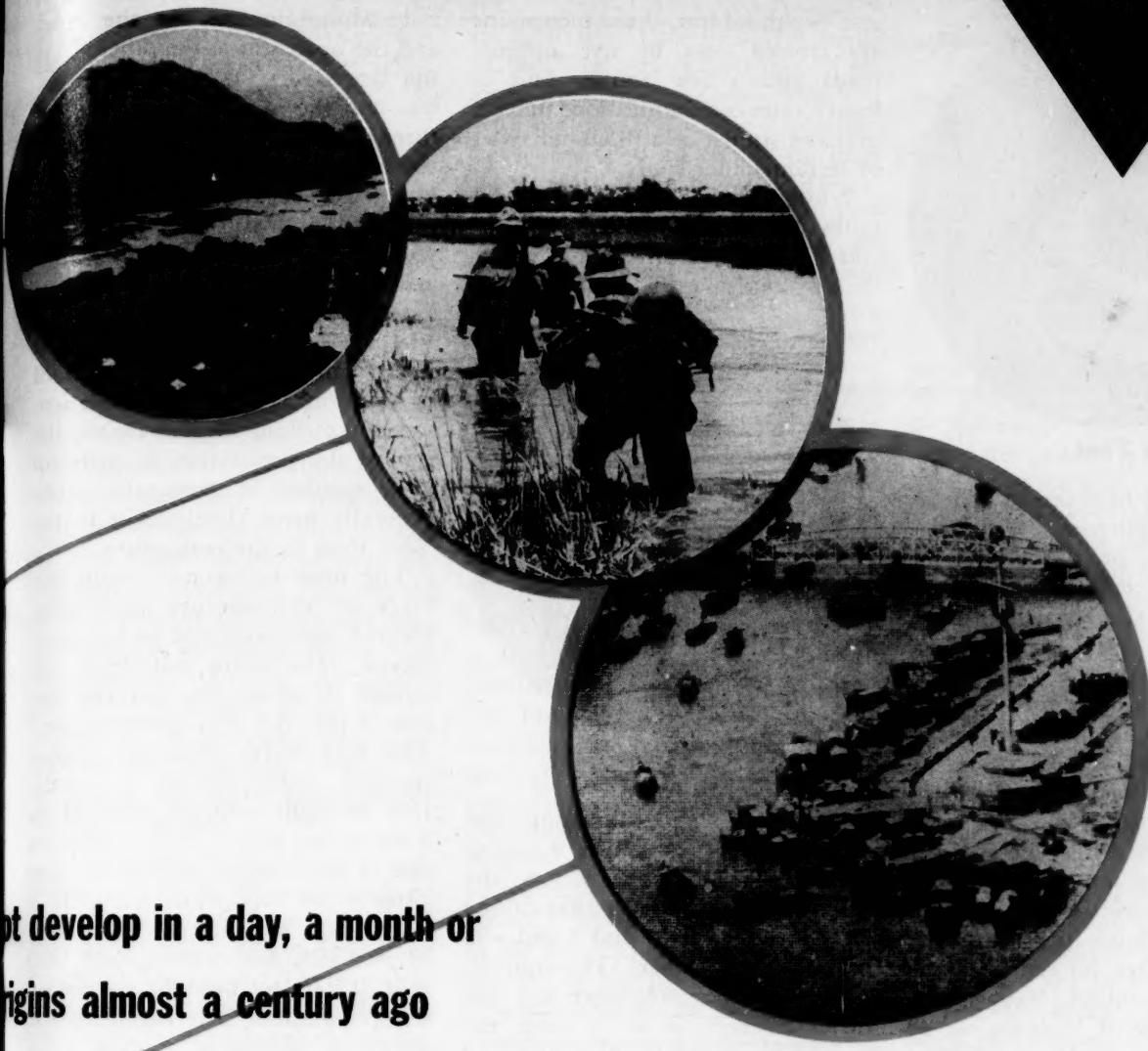
The categorized index on page 83 will help all readers of the *GAZETTE* who intend to keep their 1954 copies in the new *GAZETTE* Binder. For details on obtaining one of these new binders see page 8.



The chaos did

a year. It had its

THE RECENT MARCH OF EVENTS in the three unfortunate States that comprise Indochina has resembled a snowball gathering momentum on a hillside rather than the stately march of man-guided history. However, this accelerating chaos did not develop in a day, or a month, or even a year. It had its origins in French colonial policy of at least the past 50 years and gained explosive strength in the years since World War II; years during which a weakened France did not fully realize the extent of her commitment in attempting to restore her former predominance in Indochina. It remained for M. Mendes-France to recognize publicly something of



... does not develop in a day, a month or
... had its origins almost a century ago

INDOCHINA

the extent of the over-commitment of France as an Empire, and take measures deemed necessary to reduce those commitments to a scope within the capability of the France of today. It was only then that the potentialities for chaos in Indochina became fully manifest to the outside world.

Actually, the warfare has been confined, in the main, to the eastern half of Indochina. That is, the territory embraced by the State of Vietnam. The whole of the area generally known as Indochina is made up of the State of Vietnam, the Kingdom of Cambodia and the Kingdom of Laos, in the order of their importance. From north to

south, the State of Vietnam is further sub-divided into the Provinces of Tonkin, Annam and Cochinchina. Collectively, Vietnam, Laos and Cambodia are known as the Associated States of Indochina.

Until recent months, and the Geneva Conference, it had been customary for our newspapers and columnists to speak of Indochina as though it were an amorphous area, uniform in terrain, population, culture and history. If it did nothing else for our enlightenment, the Geneva Conference did at least make reasonably plain to the reading

public that there are *three* states in Indochina, and that the long war between the French and the Viet Minh had been confined almost exclusively to Vietnam. However, the accounts I have read did not give much reason for the situation that found the Vietnamese in violent revolution against French rule, while the only warfare in Laos and Cambodia was introduced by invading Viet Minh forces, with virtually none of the natives of those states joining the rebels.

If the pages that follow explain some of the major reasons for the differences in attitude toward the French of the indigenous populations of Vietnam, Laos and Cam-

By Col F. J. McQuillen



Service Presse Info

A Thai

bodia, they will have served at least a part of their purpose.

The peoples of the Associated States, and of neighboring Thailand as well, are of the Mongoloid race, hence resemble the Chinese in appearance. The details of their history are lost in antiquity, but the general outline, especially that of Vietnam, is known. They are reputed to have had their origin in the South China of today, and to have been pushed into the inhospitable jungles of Southeast Asia by the true Chinese pushing down from North China in pre-historic times. Thereafter, for centuries, the Annamite Mountain Range that forms the spine of Vietnam served to separate the people of the Thai race in Laos and Thailand plus the Khmers of Cambodia from the Annamites who dwelt in the two deltas and the coastal area of Vietnam. Though not high as mountains go (the highest peaks rising to only 9,000 feet), the Annamite Mountains served to divide the peoples of the area in much the same manner as a mole projecting into the sea separates the waters on either hand.

The waves of population pressure and culture from the direction of China spent themselves against the Annamite Mountains with little effect on the Thais and Khmers. The similar waves from the direction of India, though of less intensity and devoid of population pressure, likewise spent themselves against the Annamite Mountains with little effect on the Annamites of the eastern coast. The Annamite Mountains make up in jungle, disease and man-killing wild animals for anything they lack in altitude. Even now, after a century of French influence

and expansionism, those mountains are crossed only by five difficult roads and a few trails. This is scanty inter-communication, indeed, over the stretch of a thousand miles of terrain under study.

While the impact of the Annamites was not great on the Thais and Khmers, the latter were nevertheless unpleasantly aware of the



A Khmer

former. The more numerous and more vigorous Annamites occasionally raided into and across the mountains to an extent that caused the people of Laos and Cambodia to hate and fear them. The animosities thus engendered over the centuries explain, in a measure, the lack of success of the Viet Minh in subverting the peoples of Laos and Cambodia today. Likewise, in times past, the Annamites grew to hate and fear the incursions of the Chinese, incursions that intermittently reduced Tonkin and Annam to the status of tributaries of China until the conclusion of the Sino-French Treaty of 1885. Perhaps, were it not for the animosity against the Chinese thus engendered in the Annamites, the French would long since have been confronted by an army of Chinese "Volunteers" in addition to Annamites armed by the Chinese!

Besides the Annamite Mountains, there are other geographical aspects of Indochina that should be mentioned. The combined area of the three Associated States totals 287,000 square miles, an area greater by one-third than European France.

Vietnam is a long splinter-shaped State that derives its borders, in the main, from the natural defense line drawn along the ridges of the Anna-

mite Mountains on the one hand and the open sea on the other. It is the largest, by far the most populous, and the most important of the three Associated States. It has been the scene of virtually all of the warfare waged between the French and the Viet Minh during these several years and will be dealt with in this article almost to the exclusion of its sister States of Cambodia and Laos. Vietnam has a territory of 127,500 square miles and a population of 23 million. Of that population, some 20 million are Annamites; the rest of the population is made up of a number of mountain tribes, generally more closely akin to the Thai than to the Annamites.

The most important terrain features of Vietnam are its jungle-covered mountains and its two river deltas. The State has been described on occasion as "two rice baskets at the ends of a carrying pole." The Red River delta of Tonkin provides sustenance for a population of eight million clustered in 8,000 square miles. It thus supports one of the heaviest population densities to be found anywhere. It is only by the most intense cultivation of this rich and well-watered land that it can be brought to sustain this population. The rice fields are, in effect, cultivated swamps criss-crossed by low earthen dikes that permit the peasants to control the level of flood and drain their garden-size rice paddies as the requirements of the growing season dictate. The tops of the larger dikes also serve as footpaths for the populace, a populace that normally travels on foot. Nor are road-building engineers welcomed in the delta. In the reasoning of the peasants, a highway or an airfield takes valuable rice land out of production, hence threatens hunger for additional hundreds or thousands. They much prefer to cultivate the land and transport their rice on their backs, or in boats on the canals and rivers.

The two important cities of the Tonkin Delta are Hanoi, the capital of the Province of Tonkin, with a population of 300,000, and the port city of Haiphong on the Gulf of Tonkin, 60 miles to the east. Both are occidental-type cities in the French manner with broad streets and major buildings of European

architecture. Hanoi boasts some rather imposing government buildings and a pleasant park with its own artificial lake.

The climate in Tonkin is subtropical. The winter months of December, January and February are cool enough to permit the wearing of woolen clothing and thus afford a change of climate not found in Saigon, Bangkok or Singapore. These are also months of the dry season, as distinguished from the rainy or southeast monsoon season. The latter lasts from June to September, inclusive, is punctuated with heavy downpours and marked by high humidity and uncomfortably high temperatures. The months of January to March in Tonkin see a phenomenon known locally as "crachin weather." During this period the sky is obscured much of the time by a low overcast interspersed with drizzle. Naturally, combat air operations are greatly hampered by "crachin weather."

From Hanoi one has only to proceed some 50 miles northward or westward to encounter foothills and mountains with their concomitant jungle and malaria. These mountains extend northwestward with increasing elevations into and across the Province of Yunnan, in China, to merge with the Himalayan chain. Whereas the Tonkin Delta is one of the areas of greatest population density in the world, the mountainous region of Indochina is only sparsely inhabited. A major factor in keeping the population low in these mountainous areas is the high incidence of a particularly virulent malaria. The anopheles mosquito does not thrive in the muddy waters of tropical deltas, but does multiply rapidly in the clear waters and ponds of the mountain areas. For this reason, the Viet Minh forays into Laos in the past two fighting seasons have been staged in the middle of the dry season when the incidence of malaria was at a minimum. The scattered tribesmen that inhabit these mountains live in villages perched on hillsides and eke out a scanty living by scratch-farming suitable plots of ground to the extent of their requirements for food, plus some cultivation of opium poppies to provide a "cash

crop." These tribesmen are mostly of the Thai and related races. Centuries of occasional unhappy contact with the coastal-dwelling Annamites have developed an enmity on their part toward the Annamites. Hence, in the present century, they have come to regard the French as protectors who shield them from incursions by the Annamites.

Proceeding southward from the Tonkin Delta, one finds long stretches of sandy beaches backed by a generally narrow coastal fringe of cultivatable land that shortly rises into the Annamite Mountains. Along this coast, fishing in the open sea does much to supplement the produce of the land in providing a living for the population. The city of Hué was the ancient capital of the Emperors of Annam, whose domain consisted generally of what are now the Provinces of Tonkin and Annam. A little farther south, lies the port of Tourane, a squat city and secondary port that has also been developed into an important air base in recent years. Still farther south, the Annamite Mountains broaden into a plateau area known as the Moi Plateau because it is inhabited by the primitive Moi race, a people loyal to the French. They

clothe themselves in loin cloths, erect their houses on stilts to foil marauding tigers, worship nature in the animist manner and maintain a matriarchal society. Their villagers supplement their scanty incomes by capturing and taming wild elephants in a manner reminiscent of the capture and breaking of wild horses on our western ranges.

The southern slopes of the foothills farther south are dotted with the plantations that provide much of the rubber required by France. Then the ground falls off to the few feet above sea level that denotes the flat delta of the Mekong River. This delta is shared by the southern Vietnamese of Cochin-China and the Kingdom of Cambodia. Like the Tonkin Delta in the north, this delta is a rich rice-growing cultivated swampland interlaced with canals and tributary streams that provide most of the highways of commerce in the area. Probably because the incidence of disease has kept the population below a level that would consume all of the rice grown, the delta of the Mekong produces a surplus of rice for export, or for movement to Tonkin in years when there is a short-fall in the rice crop in the latter area. In pre-war years, the rice surplus of Indochina amounted to some two million tons per year. The disturbances occasioned by the continuing war between the French and the Viet Minh have greatly reduced that surplus. It has amounted to only 200-300,000 tons in post-war years.

Naturally, Communist control of the Mekong Delta would permit the diversion to hungry mouths in China of the surplus rice of Indochina that formerly went to Free World countries of the Far East.

The major city, and post-war capital of Indochina, is Saigon, located 40 miles up-stream from the mouth of the Saigon River. This river is interconnected by canals with the several tributaries into which the Mekong branches as it approaches the sea. Saigon, together with its twin city of Cholon, has a post-war population of two million. Both Saigon and Hanoi are normally pleasant, quiet cities in the French manner. They are marked by wide tree-shaded boulevards, imposing houses, luxurious lawns and



Geography caused animosities which are reflected in today's changing political patterns

A Laotian



Service Presse Info

gardens and inviting parks. Hanoi, in addition, possesses a quota of ancient temples.

To the west of South Vietnam lies the Kingdom of Cambodia. It has an area of 70,000 square miles and a population of three and a half million. The capital city of Pnom Penh also has wide streets and the majority of its buildings are of European style. However, the Government buildings occupied by the King and his Court are of oriental architecture almost identical to that of the Court of Thailand.

Cambodia has some low-lying mountains in the northeast, and a fringe of mountains marks its border with Thailand on the southwest. Elsewhere it is largely flat and productive land that produces annually some 125,000 tons of rice surplus to the needs of the populace. The large lake, Tonle Sap, near Pnom Penh serves as a natural reservoir for the areas around it. When the Mekong is in flood, Tonle Sap fills with water, expands its area, and furnishes water for the rice paddies for miles in all directions. The lake also furnishes quantities of fish important to the diet of the inland areas of Cambodia.

Thus, blessed by a bountiful nature and espousing for the most part the non-violent religion of Buddhism, the Cambodians are noted for a placid, easy-going temperament. They are of the Khmer race, akin to the Thai, but with an admixture of Chinese, Malayan and Hindu blood. The Khmer civilization flourished in the Tenth to 15th Centuries, A.D. In that era the Khmers were often at war with the Thais. What is now the great ruin of Angkor Wat was probably largely constructed by slave labor derived from wars with the Thai. However, centuries of easy living have taken their toll of the war-like vigor of the Khmers. Hence they have proven, since establishment of the Protectorate in 1863, among the most docile of France's subject peoples. Instead of opposing the French, they have, in the main, been happy to rely on the French to protect them from the Annamites and other potential enemies.

To the north of Cambodia, and on the western side of the Annamite Mountains, lies the Kingdom of Laos. It is a long, narrow country of 90,000 square miles of generally rugged and inhospitable terrain. Its population of only a million and a half is 90 per cent of the Thai race. The major part of that population ekes out its subsistence along the East Bank of the Mekong River. That river marks the boundary with Thailand for a distance of 500 miles. If it were navigable throughout its length, the Kingdom of Laos would doubtless be more developed. Unfortunately, several rapids preclude through navigation of the Mekong, and have hence rather isolated the Laotians from contact with the outside world. In consequence of its sparse population and remoteness of location, Laos has developed virtually no export trade (if one excepts the small amount of opium that finds its way out of the Kingdom).

ESSENTIAL HISTORY

From the First to the Tenth Centuries, A.D. the portion of Vietnam embraced by Tonkin was ruled by China. The Annamites rose time and again in rebellion. In the Tenth Century they achieved independence from China. Again in the 13th Century they were threatened by the

armies of Kublai Khan, but managed to repulse the invader and retain their independence. In the 15th Century, the Chinese tried again to take over the area and did succeed in obtaining acquiescence of the Annamite Emperor to recognition of the Emperor of China as his Suzerain Lord.

With the passage of time the Annamites moved southward from Tonkin. They defeated the Chams and took over their Kingdom of Champa in the region now known as Annam. They moved still further south until, by war and conquest, they pushed the Khmers back to the present frontier of Cambodia. By war, colonization and inter-marriage they had completed the conquest of present-day Cochinchina by the middle of the 18th Century.

Despite, or because of, their long history of conflict with China, the Annamite society was patterned very closely after that of the China of the time. Absolute power was vested in the Emperor. But he, his subordinate Mandarins and the people were bound by accepted standards of ethical conduct and the nation was viewed as being founded on the people. The Emperor governed through a bureaucracy of mandarins who were appointed, as in China, following successful undertaking of the prescribed literary examinations in the Chinese language. The Emperor generally confined his authority to religious and military matters. The life of the people was regulated within the village, which was essentially the basic unit of the society, by the oligarchy of the village. The average peasant raised enough to provide food for his family and a small surplus for barter. Education was widespread, and the system of appointment of officials through examinations insured the periodic infusion of new blood into the governing hierarchy. Great wealth and abject poverty were both unknown. The society thus evolved was stable, cooperative and introverted. Since it had been evolved by the Annamites themselves, it suited them well.

In the latter part of the 18th Century and following the conquest of Cochinchina, a dynastic war broke out in Vietnam (Annam). There were already some Frenchmen in the south in the persons of Catholic missionaries. The heir to the throne,

Prince Nguyen Anh, appealed to Bishop Behaine to assist him in recovering the throne. The Bishop assented and, after the lapse of more than ten years, was able to provide enough assistance in volunteer military aid to enable the prince to unify the country and ascend the throne. As the Emperor Gia Long he ruled Vietnam from 1802 to 1820. During this time he provided a progressive administration and opened his country to occidental trade and technical developments. As one would expect, in view of his debt to the French Bishop, whom he cherished throughout his lifetime, Gia Long esteemed the French and afforded them opportunities denied to other occidentals.

Following the death of Gia Long, however, his successors sought to again withdraw their country into a shell of anti-foreignism. In the ensuing 38 years, anti-French and anti-Catholic policies gained strength at the Court. Even the punitive lesson of 1847 in which the French sank the Emperor's Fleet in the Bay of Tourane, failed to have a permanently salutary effect. In 1858 foreigners came in force in a joint Franco-Spanish Expedition to punish the Vietnamese for their treatment of French and Spanish missionaries. By 1862 The Emperor Tu Duc had been compelled to cede the three eastern provinces of Cochin-China to France. Thereupon the Spanish element of the Expedition took its departure. The French remained to further develop their foothold in Vietnam. As the French Captain Gosselin chronicled: ". . . The missionaries, in reality, have only been the pretext for our action against Annam. The loss of India in the 18th Century, the increasingly rapid extension in the Far East of our perpetual rival, England, imposed on us the obligation to set foot in the China seas, the only alternative being our falling into a state of contemptible inferiority. Annam gave us the opportunity, the massacre of Frenchmen who were there as missionaries gave us the pretext."

By 1867 the French had expanded their holdings to include the remaining three provinces of Cochin-China. Cambodia had been incorporated as a Protectorate in 1863. Tu Duc continued to obstruct French expansion into Annam and Tonkin until his death. Thereafter, in 1883, the

French established a Protectorate over Tonkin and Annam.

Establishment of the Protectorate did not end opposition to the French. The young Emperor Ham Nghi soon took to the forest and waged war as best he could, supported by the mandarins and scholars of the country as well as the population. There followed three years of guerrilla warfare before Ham Nghi was betrayed to the French, captured and later exiled to Algeria. Thereafter Vietnam settled down to relatively peaceful development by, and for, the French.

In 1893, following the conclusion of a Treaty with Siam, the French set up a protectorate over Laos. The French did not, in this case, sign a parallel treaty with the King of Luang Prabang, although they had signed treaties with the Emperor of Vietnam and the King of Cambodia in similar circumstances. This omission is attributed to the tendency of Frenchmen of the time to regard Laos as simply composed of principalities over which Vietnam and Siam had fought for centuries.

The development of Vietnam naturally included bringing in the Western concepts of civilization and material progress. The French improved existing roads and built new ones, laid some 2,000 miles of railroad, improved irrigation, expanded agriculture and introduced modern medicines and sanitation. In consequence, the population of the State has doubled during the 70 years of French rule. But this population increase has not been an unalloyed blessing. Because of the concomitant sub-division of peasants' lands, more than half of the peasants in Tonkin now own less than an acre per family. Under these conditions, the struggle for a livelihood became intense indeed.

Many French officials of the time conceived of their offices as carrying forward France's "*mission civilisatrice*." They succeeded in implanting French civilization among the small upper class and caused many of them to send their sons to study in French schools in Indochina and France. As a result of these efforts, French influence, language and culture eventually permeated the entire fabric of the Associated States. Any visitor who does not speak French soon finds that he cannot ask direc-

tions on the street, cannot give his orders to a taxi driver and cannot get a telephone connection without an interpreter at his side. Since English (though broken into one or another form of "pidgin-English") is the "esperanto" of trade and tourists elsewhere in the Far East, some appreciation of the extent to which French civilization has penetrated Indochina is thus brought home abruptly and convincingly to the visitor.

In the field of government, the French continued to maintain the fiction that the Emperor, with his capital at Hué, continued to rule Tonkin and Annam through his Mandarins. However, the Court had no function other than a ceremonial one and all effective power was firmly and closely held in French hands. Cochin-China was governed as a colony of France. The cities of Hanoi, Haiphong and Tourane were also under direct French rule. The Governor General was the highest French Official in Indochina. Each Protectorate was governed by a *Résident Supérieur* and Cochin-China by a Governor; all of whom were responsible to the Governor General. The latter was, in turn, responsible to the Ministry of Colonies. While provision was made for the naturalization of natives as French citizens, many who were qualified did not seek citizenship. By 1937, only some 2,500 Vietnamese had been so naturalized.

With all but the menial posts in the government reserved for French citizens and the industry of the country dominated by the French

A Cambodian

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monopolies, the Vietnamese found that there was little opportunity offered them outside of agricultural pursuits. Finding themselves discriminated against legally, socially and economically in their own land, the land in which they had been supreme as recently as 1858, the Vietnamese developed a smoldering hatred for their French masters that occasionally erupted into violence. One such eruption took place in February, 1930. Members of the Vietnam Nationalist Party (VNQDD) infiltrated among the soldiers in the Vietnamese-manned garrison at Yen Bay. In the night of 9 February, they massacred their French officers and took over the post. This was planned to signal a general uprising, but ensuing disturbances in Hanoi and other cities were short-lived. French police action was swift and effective. A number of the leaders of the conspiracy were captured. In June, 13 of these were put to the guillotine at Yen Bay, the scene of the mutiny.

Thereafter, until 1940, Vietnam continued peaceful and the French continued to prosper. In fact, in 1940 transportation activities in Tonkin saw a notable upsurge in prosperity as a development of the Japanese aggression against China begun three years before. The Japanese had closed off all of the important ports of China and driven its Government to the distant inland city of Chungking. The chief port remaining open to the Chinese was Haiphong. From there, war materials could be shipped by rail through Hanoi and Laokay to Kunming. It was also possible in season, to truck materials from Haiphong to Free China. This traffic was destined to be brought to an abrupt and untimely end. Immediately after the fall of France in the summer of 1940 and the inauguration of the Vichy Regime, the Japanese Government demanded of Governor General Catroux that he

halt the traffic in war materials to China and permit Japanese inspectors to verify that such traffic had indeed been halted. After vainly appealing to Great Britain and the United States for support in resisting the Japanese demands, General Catroux yielded to the Japanese.

The author had occasion to travel from Haiphong to Kunming in September, 1940. The warehouses of Haiphong were bulging with materials once destined for China. And it seemed that every vacant lot was filled with American motor trucks that the Chinese Army badly needed. At the hotel in Hanoi, a Japanese general was already ensconced with staff and retinue. They hissed happily as they stalked through lobby and dining room with the inevitable swords clanking at their sides. At Laokay, a Japanese inspector was already functioning. Agreeably, he passed my baggage without question.

During the few days spent in Hanoi, I was struck by the absence of the customary group of American businessmen commonly encountered in the cities of the Far East. One of the three Standard Oil representatives then in the city explained that the French didn't leave much room for the businessmen of other countries to operate there. The French were then unable to bring in petroleum products from anywhere in the French tariff bloc, hence permitted this firm to import a restricted quota of oil products.

Under the circumstances, with France prostrate and the Governor General having no military support other than 50,000 armed men of all categories and races, one cruiser, four patrol craft and a handful of non-combat-worthy aircraft; it was estimated that the French could stand against the Japanese for only a month or two at most. It was not surprising, then, that by August, 1940, the Japanese were back with another ultimatum to the Governor

General. In the interim, Vice Admiral Decoux had replaced General Catroux on orders from Vichy. This ultimatum demanded that Japanese troops be allowed to cross Tonkin and to occupy Indochina airfields. The French resisted and negotiated over this ultimatum for several weeks. On 22 September, the Japanese took punitive action against the French border posts of Langson and Dong Dang and landed on the coast. French resistance crumbled in three days. Admiral Decoux had already acceded to the Japanese demands even as the latter were initiating their punitive action.

Japan was not the only nation that saw opportunity in the weakened state of the French in Indochina. Thailand chose this time to demand return of the portion of Laos on the West bank of the Mekong that it had been compelled to cede in 1904 and three western provinces of Cambodia that it had likewise been compelled to cede to that Kingdom in 1907. Thailand's demands were satisfied by a treaty signed with the French representatives in Tokyo in May. Also, the Japanese had obtained for themselves agreement from Vichy that Japanese troops could occupy strategic bases in South Vietnam. In July they landed in force in Saigon. By December, and "Pearl Harbor," the Japanese had moved some 40,000 troops to advanced bases in Indochina. These were later employed against Malaya and Burma. Reports of unusual activity on the part of the Japanese troops in Indochina in late November, 1941 are said to have tipped off Allied intelligence agencies that Japan's entry into the war was imminent.

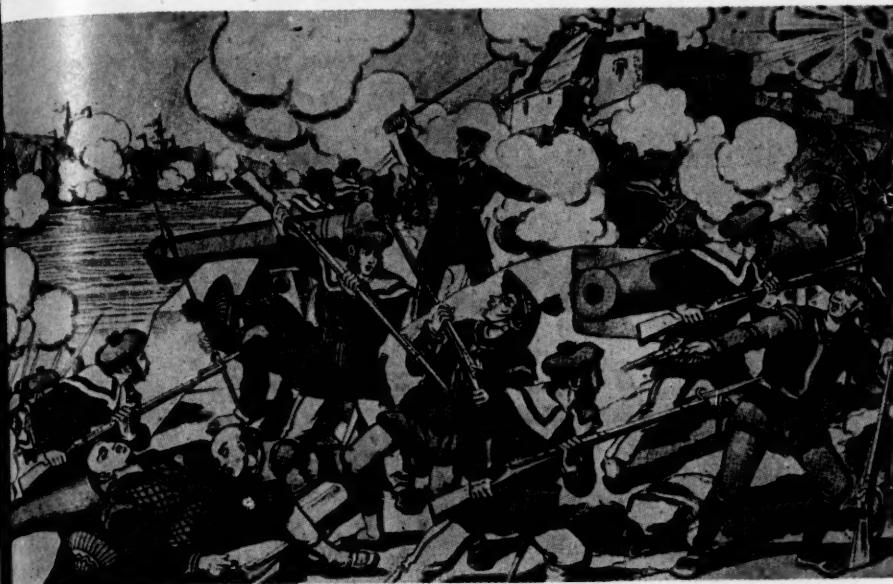
On 8 December, a Japanese general visited Admiral Decoux with the ultimatum that he agree, during the war now begun, to interpose no interference to the Japanese forces on the penalty of having Indochina

After the death of Tu Duc came the subjugation of Tonkin Province

Bettmann



Bitter Annamite resistance at Hue signalled "mission civilisatrice"



Bettmann

taken over by the Japanese. After a day of thought, and a night of negotiation, Decoux reached an agreement that confirmed French sovereignty, permitted the French to continue to control their Army and the administration of the country, but the Japanese free to fight their war against the Allies from Indochina soil.

Thereafter Japanese demands were largely confined to the economic field until March, 1945. In this field a series of annual economic agreements provided for shipment of Indochinese rice, rubber and minerals to Japan in return for industrial products and consumer goods. One effect of the economic agreements was that they enabled the Japanese forces stationed in Indochina to live off the land with currency (piastres) advanced by the Bank of Indochina.

During the first three years of the war the Japanese were content to leave the administration of the country in French hands. They seldom ventured far from their bases and the normal routes of communication. French officials continued at their accustomed tasks and French forces put down insipient rebellions as forcefully and effectively as before. The natives had little cause to note the over-lordship of the Japanese. While the Japanese did circulate their propaganda and voice their slogan of "Asia for the Asiatics," in-

troduce Japanese movies and force some teaching of the Japanese language in schools, they did not strike a responsive chord in the population of Indochina. Their lasting imprint was to be manifested in other ways!

By the end of 1944 it became apparent to the French in Indochina that Japan was losing the war. They began to talk and plan for the day when American forces would land on the shores—the French Army would turn on the Japanese and join with the Americans to liberate the land. By January, Allied aircraft were covertly dropping agents and supplies on an average of two flights per week. A Free French Mission in Kunming worked in conjunction with the American OSS and other agencies in the program of building the Resistance in Indochina. These activities, of course, came to the attention of the Japanese. In due course they determined that the French could no longer be trusted to control and administer the land for them. On 9 March, 1945 they moved simultaneously throughout Indochina to take over administrative control, disarm and concentrate French armed forces and otherwise take complete and direct control of the area for Japan. Some French garrisons offered effective resistance, notably those at Langson and Dong Dang. They were able to hold out only two or three days and the survivors were massacred by the

enraged Japanese as a result of their heroism. Certain isolated garrisons beyond effective reach of the Japanese managed to gather in the forests and mountains of Tonkin and Laos. General Alessandri took command of the group and managed to lead 6,000 men to safety in Free China. However, it was only a matter of a few days until the Japanese were in control of all the parts of Indochina that they elected to hold.

While the Japanese took control of the country by substituting Japanese for French officials, they effected certain other political changes designed to strengthen their hand. The most important was to cause the Emperor Bao Dai to proclaim Vietnam an independent nation. He thereupon appointed a cabinet of nationalist-minded men and proceeded to take over more of the functions of government in Tonkin and Annam than had been permitted by the French. The Japanese continued the administration of Cochin-China separate from that of Tonkin and Annam until they were on the verge of defeat. In August, 1945 they restored Cochin-China to Vietnam.

The impact on the native populace of Indochina of this uncere monious supplanting of French officials by Japanese was grave and enduring. But it was not readily apparent at the time and was not to be assessed until long after. The natives had long chafed under French rule, but had been taught to respect that rule. They had also regarded the administrators of that rule as superior beings of another race and world. Now they saw those superior beings forced to bow to another oriental race and forced to obey the dictates of those orientals. During the brief five months of Japanese rule the French lost so much "face" in Indochina that a major portion of the population of Vietnam concluded they were no longer worthy of native respect. A series of resounding French victories during the years of warfare with the Viet Minh would doubtless have restored French "face" in Indochina, but those victories have not been forthcoming.

USMC

(To be concluded next month)

A new rifle may be coming—to realize its full potential we must stand ready to adapt our organization and tactics to it

By LtCol Brooke Nihart

MORE FIRE

WE READ THESE DAYS OF THE proposed adoption of a new rifle to replace the M1 Garand. How would such an adoption affect the Marine Corps? As with most new weapons—organization, training and tactics could change considerably. Let's take a look at this new rifle and see what could happen.

Several makes and models of rifles have been proposed and tested—Belgium's *Fabrique Nationale d'Armes de Guerre* (FN), Britain's new Enfield and US Army Ordnance's T-44 and T-46. A new cartridge, the T-65, a US Army develop-

ment, has been adopted for NATO-wide use. Test rifles all have been barreled for it. NATO nations on the continent and Canada have settled on the Belgium FN rifle and are planning manufacture or purchase.

Britain's announcement of the proposed adoption of the FN almost precipitated a question of the Prime Minister in the House of Commons as to why the British rifle was not accepted instead of a foreign contraption obviously inferior to the solid British product. Nevertheless, in spite of this delay, Britain has

From top to bottom (right):
the "FN," Army Ordnance's
T-44, and our present M1





REPOWER SMALLER UNITS

now adopted the FN. This leaves the US as the only holdout. We have procured several thousand FNs for service test but are withholding final approval.

We may accept the fact, however, that sooner or later we will have a new infantry weapon. Certain characteristics, generally applying to all models, are discernable. Weight will be slightly less than the M1, but even less weight will be sought and the ultimate model may be lighter still. Full or semi-automatic fire will be available from a 20-round magazine. Ammunition—the .30 caliber T-65 round—will be about ten per cent lighter and about 30 per cent shorter. A straight-line stock will permit more accurate full automatic bursts. A bipod may be provided for more accurate fixed fire. Flash hiders, compensators and grenade launchers will be furnished.

All of these characteristics seem to add up to a light-weight, more effective Browning Automatic Rifle-type weapon. Are there, then, any organizational or tactical implications for the Marine Corps in a new weapon which would put the fire-power of a BAR into the hands of every rifleman without increasing his present load?

Basically, as concerns organization, two alternatives seem possible. First, we might issue the new rifle throughout our existing organization and

thus multiply present firepower three or four times. Second, we might try to keep firepower about the same but reduce the number of men required to generate it.

By issuing the new rifle to our existing organization we would, in essence, retain that same organization with all its proven strengths and, for warfare of the future, some alleged weaknesses. Our present Marine infantry organization has been well tested in two wars and has been found very satisfactory, to say the least. Increasing rifle firepower at the cutting edge without increasing the number of men has obvious attractions and would work well. This is the obvious and probable solution, considering our success with the present organization and the fact that military organizations generally evolve slowly. However, our present organization is big in numbers and sometimes has been condemned as being unwieldy. Furthermore, the trend is towards cutting the armed forces numerically and streamlining their organizational forms. With this in mind, perhaps another look at possible reorganization based on the new rifle is indicated.

One aspect of the development of weapons and tactics in the past hundred years has been an increase in the size of infantry units to double or more. During this same period,

firepower (through technological developments) and dispersion, or frontage occupied, have increased many fold. These developments were quite normal and the development of control means, through the use of motors and electronic communications, with two exceptions, has kept pace. These exceptions are the platoon and squad. Personnel, firepower and frontages of these basic units have increased through the years but the platoon commanders' and squad leaders' means of controlling units or men has not. It would seem desirable, therefore, to reduce the size of platoons and squads to where the leader could again control his unit on the battlefield by word of mouth and personal direction.

Another case for reduced unit size is the "new look" in national defense, much in the news today. Of what does this "new look" consist? So far it is mostly talk but, as far as ground units are concerned, the trend seems to be compounded of increased speed, mobility and flexibility—of more combat power by using new, more powerful weapons using less manpower. By issuing a new rifle to our present organization, only firepower is enhanced in the infantry. True, speed and mobility have been improved by the development of helicopter transport, but helicopters will never be overabundant and

moving organizations, large in manpower, is a slow process. In the "new look," less manpower has been set as a goal because of manpower shortages, desires for economy and because concentrated manpower is vulnerable to attack by nuclear weapons. But the same manpower figures and densities are obtained when we merely substitute one weapon for another in the existing organization.

The alternate solution, in harmony with the "new look" and fu-

mander's control. A combat unit of firepower equivalent to a larger present day unit would occupy less cube and weight in a landing craft or helicopter. The present rifle platoon is too large for any landing vehicle or helicopter. When reinforced with crew served weapons it is grossly unwieldy. Either way, to be moved mechanically, it must be split between vehicles with the resultant loss of tactical integrity. A smaller platoon with the same firepower might be lifted in one vehicle



A fire team could have the firepower of a squad

ture combat requirements, would be to keep the same firepower but reduce the number of men required to develop it. In other words, cut down the size of the rifle squad. This would accrue a quantitative advantage by giving greater firepower to our existing organization. However, a reduction in manpower while maintaining present firepower also has its attractions and advantages.

Maintaining present firepower with less manpower means deploying the same combat power, but in a physically smaller package. This possibility is tremendously important these days when the "economy axe" is cutting armed forces to the bone while worldwide commitments remain the same or even increase. In the final analysis, US manpower is the most expensive ingredient of national defense. If we can field just as strong a team with fewer men, economy is served right from the cost of recruiting and training to the ultimate and more important goal of fewer casualties resulting from fewer men being exposed in a given impact area.

The same firepower with less men could mean smaller, handier units. These units could be composed of more select men, be better trained and be more responsive to their com-

and tactical integrity preserved. Fewer vehicles would be needed to move companies and battalions, with economy and mobility the result.

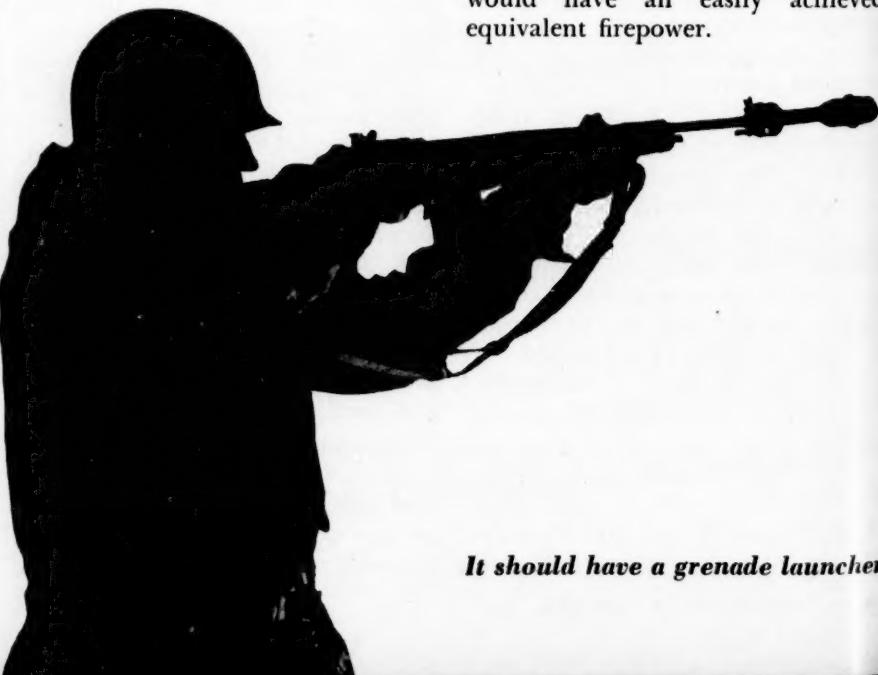
Smaller units with comparable firepower would require less cube and weight for all supplies except ammunition. Fewer service troops would be needed to handle these supplies and even a smaller number of troops would be needed to support the service troops. At this rate the

division might be reduced 50 per cent, to around 10,000 men, yet it would have the same combat power as the present division or, conversely, we would have two divisions for the price (in manpower) of one.

Of further importance is a feature applying both to conventional combat and future combat with nuclear weapons. This is the fact that for a given combat power, less troops would be in the killing zone. This applies whether the killing zone is enemy protective fire laid down in front of his defenses or the destructive radius of a nuclear explosion. Mobility would be enhanced as fewer vehicles would be needed for a move, columns would be shorter, supplies to be moved less. Dispersion and increased mobility without loss of combat power at last would become feasible.

We have been talking in glittering generalities, but what specifically is visualized as a possible organization? Well, with every man armed with a BAR, a four-man fire team should have the firepower of a squad's three BARs and nine rifles. So a fire team armed with four of the new rifles and properly trained could equal the firepower of the present squad. Add a fifth man as squad leader so that the firepower of the other four can be fully developed and you have a rifle squad of the future.

Three of these squads, plus a platoon headquarters of a platoon commander, platoon sergeant and runner, form the rifle platoon—total 18 men. This platoon would have less than one-half the man-strength of the present platoon, yet potentially would have an easily achieved equivalent firepower.



It should have a grenade launcher

What of crew served weapons? It is understood that some of the new rifles have light machine gun versions. These would feature a heavier barrel for sustained fire, a mount and possibly a belt-feed attachment. The internal mechanism is the same as the rifle so one syllabus of mechanical training would serve for both weapons. The new rifle, therefore, would not only replace the carbine, the M1 rifle and the BAR, but also a similar heavier version would replace the machine gun. The time saved by training with one weapon instead of four could be well spent in getting more of the potential effectiveness out of the one.

With a lighter weapon and lighter ammunition, the size of the light machine gun squad could be reduced to five men. The squad leader would be the gunner and carry the gun. The other four would be ammunition carriers. This is one less ammunition carrier than with the present machine gun squad, but with lighter ammunition the same number of rounds could be carried as before.

No change is visualized in the company mortar or rocket launcher units. All individuals should, of course, be armed with the new rifle. This would arm them for self-protection. It would enable them not only to form a company base of fire with their mortars and antitank weapons, but also be able to defend and hold the area of the fire base, forming a firm base or pivot of maneuver for the company.

The same advantages would obtain further to the rear with fire and logistic support elements of battalion, regiment and division. A few men armed with the new rifle could generate tremendous firepower in defense of rear areas against breakthrough, infiltration, guerrilla or airborne attack. If the designers favor us with an integral grenade launcher on the muzzle of the new rifle, each Marine in rear areas as well as in front lines, could not only hit anything he could see with well aimed flat trajectory fire, but also could reach into defilade, or penetrate tank armor.

Tactics—individual, small unit and combined arms—in a sense would not change much with the advent of a new rifle and its concomitant organizational change. Fire and ma-



Present platoon—too large for any landing vehicle or helicopter

neuver would still be the basic ingredient. Supporting weapons would still form a base of fire. Infantry would still close with, and destroy, the enemy to seize and hold key terrain. However, the density of men on the battlefield would be less because firepower generated by the group would be greater. Movement of infantry by tank, wheeled vehicle and helicopter could be more rapid and more extensive.

Control would be an increased problem with greater dispersion and wider movement. However, with fewer men we should strive for better men. With better men, better training and the display of greater initiative becomes possible. The time saved by training with one weapon instead of four could be well applied to perfecting the required control and initiative.

Within the present rifle squad the maneuver of three elements is unnecessary and unduly complicated. Squad offensive combat is generally straightforward action—one part of the squad moving forward while another element gives covering fire. Flanking action is, at best, close-in and against but one enemy flank. This elemental scheme of maneuver

does not necessitate a triangular organization. Rather, it demands an organization by twos. The proposed five-man squad answers this need. It provides two 2-man fire teams under the direction of the squad leader. Each fire team of two is of itself a tactical entity if required to operate separately—one man moves while the other gives covering fire. Thus, the new rifle would permit a smaller squad built on this uncomplicated concept. Control and tactics would be simplified at the level where the realities of combat make simplification an absolute essential.

A new rifle is coming. Several models are being tested. We do not know which will be adopted. We do know some of its characteristics and so can postulate some of its effects. The foregoing has been an attempt to forecast some possible implications for infantry organization, training and tactics. This forecast may or may not be valid. One thing is clear, however. To make the best use of the new rifle—to realize its full potentialities—we must be alert to its possibilities and ready, if warranted, to adopt organization and tactics to achieve the advantages the new rifle could give us. **USMC**

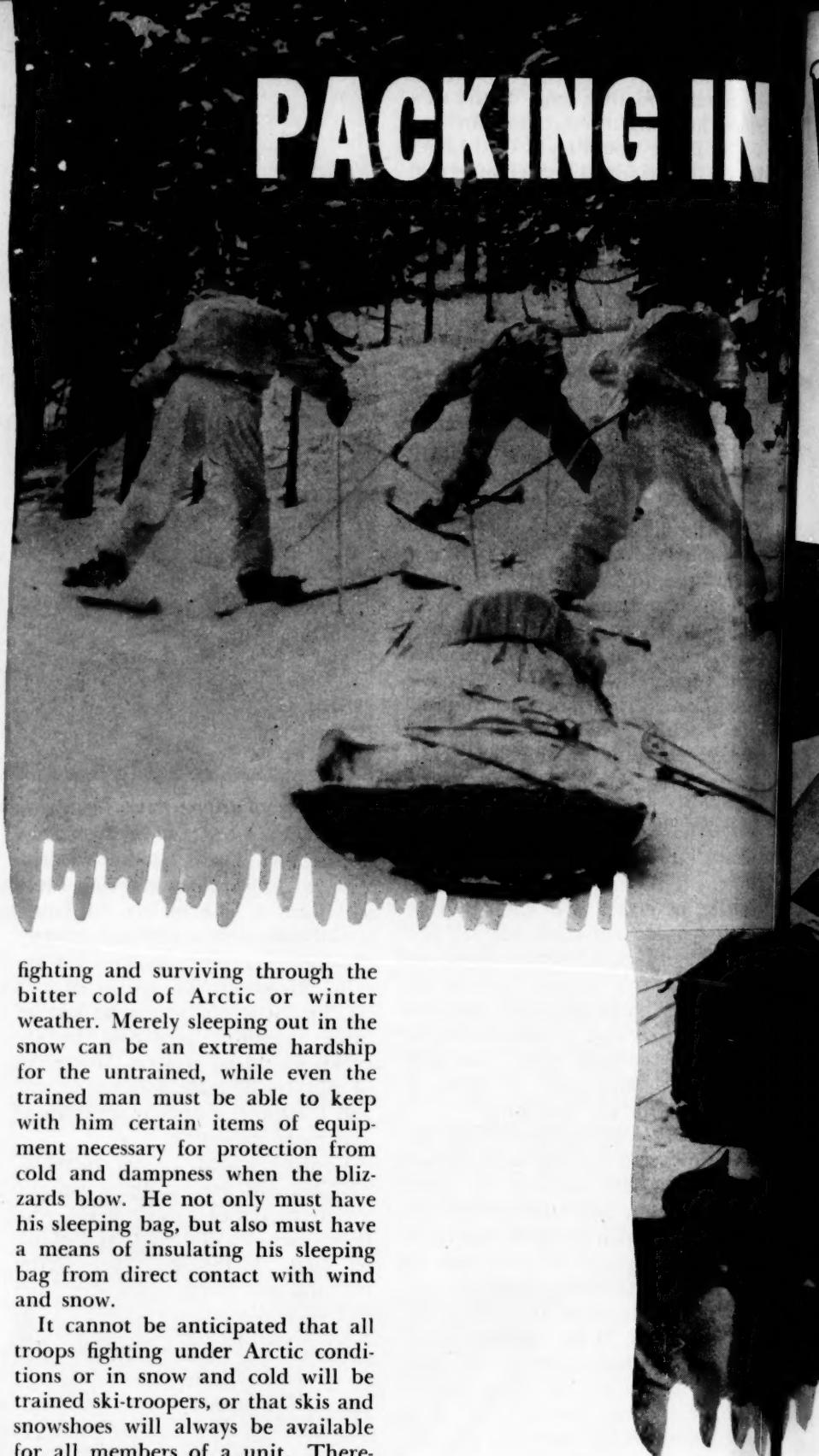
SINCE THE FIRST HANDFULL OF Americans banded themselves together in a military type group, we've been plagued with the problem of individual and small unit logistics. The ultimate purpose of logistics is to have on hand sufficient of the necessary items of sustenance for men and guns when the enemy is met. This, when it comes down to the squad, the fire team and the man, means that a way must be devised for the individual to convey his own rations and ammunition for the last portion of the march prior to closing with the enemy, and possibly during a long period of combat when resupply is not feasible.

In addition to consumables, the combat man is faced with the problem of transporting numerous items of spare clothing and shelter from the elements, especially during operations in the Arctic and during winter warfare in the more temperate climates. This problem entails the devising of a suitable method for each individual to transport his share of extra cold weather equipment such as heavy outer parka, inner boots, heavy snow socks and other spare clothing without which a soldier cannot survive during bivouacs and long enforced halts. He must also carry his personal items of tarpaulin or shelter-half, sleeping bag and extra rations to supply much needed energy and body heat.

This all indicates that the combat man in the far north is starting out under handicap of many energy-draining pounds to carry on his back all the extras needed for survival, which are not otherwise necessary in the warmer zones of the earth. Added to the back load he must carry is the weight of the clumsy foot-gear and heavy winter clothing he must wear on his body to protect against freezing and frost-bite. Thus loaded, it would appear that we must need an army of supermen, or at least rugged, well trained veteran outdoorsmen to survive the heart-taxing strain of travel under such conditions as are met in the far north.

Regardless of the fact that the American fighting man is the best fed and the best equipped soldier in the world today, the greater percentage of individuals have had no experience whatever in marching,

PACKING IN



fighting and surviving through the bitter cold of Arctic or winter weather. Merely sleeping out in the snow can be an extreme hardship for the untrained, while even the trained man must be able to keep with him certain items of equipment necessary for protection from cold and dampness when the blizzards blow. He not only must have his sleeping bag, but also must have a means of insulating his sleeping bag from direct contact with wind and snow.

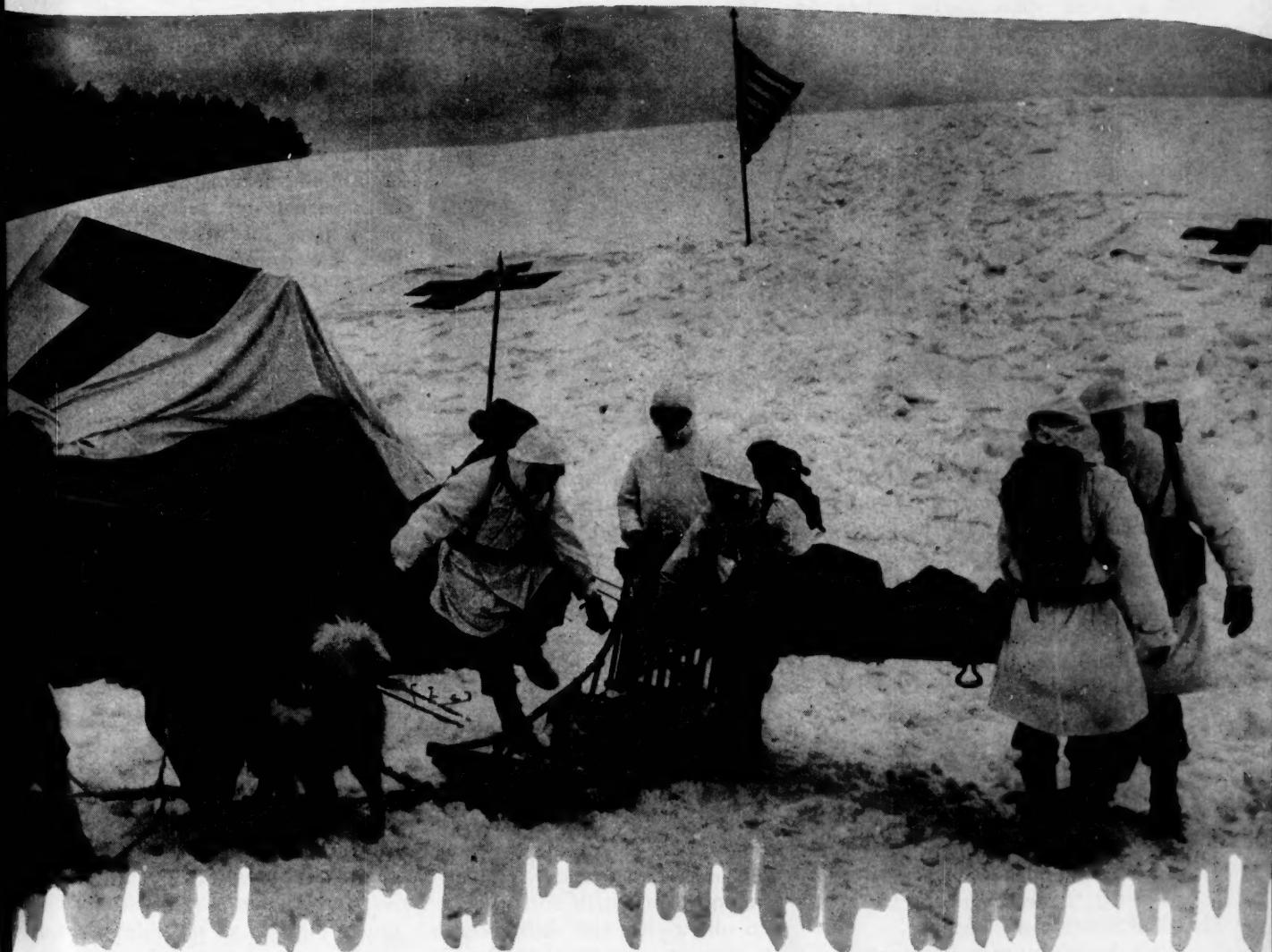
It cannot be anticipated that all troops fighting under Arctic conditions or in snow and cold will be trained ski-troopers, or that skis and snowshoes will always be available for all members of a unit. Therefore, when men push on past the limits of vehicular traffic, or when maneuverability of individuals becomes necessary, the men must de-

By
MSgt Charles M. Roberts

bark from vehicles and revert to traditional foot-slogging for transportation. It is still most essential for each individual to be as self-sufficient under winter conditions as in jungle or tropical warfare. It is vital that each man must be equipped and able to build a shel-

WINTER OPERATIONS

**When foot-slogging in the snow and ice,
man's stamina must be carefully husbanded**



ter of some type and to survive the fury of the elements, even though he may be alone and separated from the other members of his unit. His weapons, sleeping bag and rations of high caloric value are indispensable to him under such conditions, and he must retain them at all costs.

Since the individual is separated from vehicular transportation and must carry everything necessary for combat and survival on his back, he is faced with the problem of how it is to be carried in the least fatiguing manner. Naturally, the load must be as compact as possible, and se-

curely lashed so that it cannot disintegrate on the march and spill the contents. Nothing is more tiring and troublesome to a man on a long march than a bulky, badly balanced pack with additional items tied on here and there to dangle freely.

Traditionally, the American sol-

dier has used a pack of one type or another since colonial days and carried his rations and spare clothing on his back. Most ski-troopers and mountain climbers prefer the "rucksack," which is a large, soft, single compartment pack with a rigid metal framework next to the back. It is loaded in such a manner that most of the weight rests low on the back and hips. Unfortunately, or perhaps fortunately, troops in the field are not primarily mountain climbers or ski-troopers. The infantry footslogger prefers a pack or packboard that will retain the weight high on the shoulders, but in any case a weight on the back or shoulders is extremely exhausting and a great disadvantage when marching in snow or on icy trails.

worthy and suitable for Arctic use in military operations, among which are the Weasel, the Snowmobile and the Cargo Carrier, M29. These vehicles have proven of great value in transporting supplies and equipment, men and their armament, as long as the terrain and snow conditions are favorable. However, when it becomes necessary to leave the roads or open snow plains and traverse rugged mountainous country, or rough broken terrain, manpower again comes into its own.

We cannot expect favorable terrain at all times in warfare, and against a strong enemy we must anticipate that road networks and open approaches will be denied to us. The enemy will see to it that our supply lines are interdicted and our



Weasel—if conditions are just right . . .

A forced march through heavy snow or over ice-encrusted trails with a heavy pack on the back, certainly cannot be recommended as the best means of conserving the strength and energy of troops when it can be expected that battle may be imminent. "Getting there fustest with the mostest" has long been accepted as a simple basic law of tactics, but if the "mostest" are half paralyzed with cold and fatigue when they cross the line of departure, their ability to fight will become of little consequence, especially if it should happen that they are not the "fustest" and the enemy has had time for a breather.

Since Americans manufacture and own the bulk of the world's automobiles, it is natural that Americans should be transportation minded. As a consequence, many different types of oversnow vehicles have been thoroughly tried and tested in extreme-cold training exercises. Several of these have proven

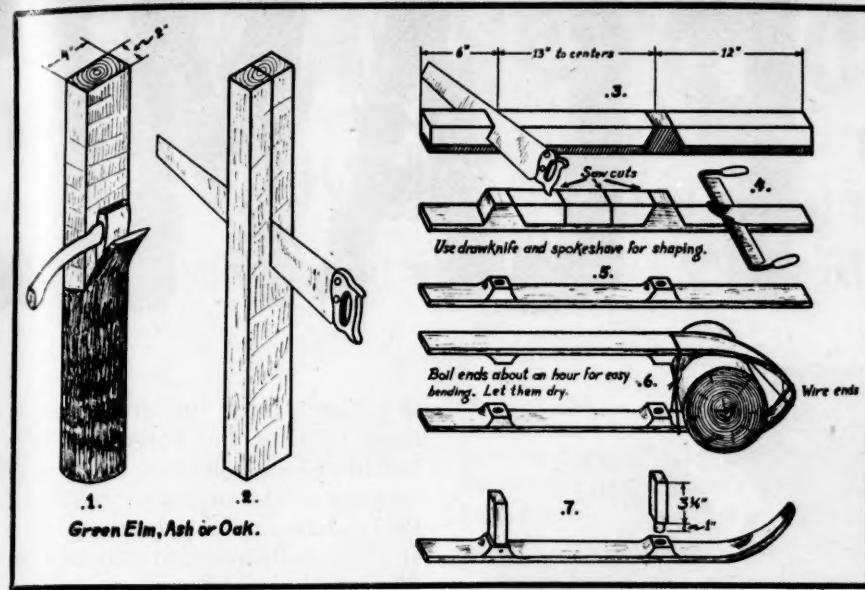
approaches channelized as much as possible for the purpose of destroying our supplies and personnel. We may find that our vast resources of motorized equipment will avail us little, and then our most logical supply method must be by airdrop. If rapid movement of troops is necessary, we may use the vertical envelopment principle. If weather should prevent these measures, and under arctic or extremely cold conditions bad weather is quite frequent, then we must fall back on the old solution of sending the infantry forward.

The motorized oversnow vehicles are intended primarily for transportation of supplies and ordnance, or when used as troop carriers, for the movement of groups of combat personnel. The dog sled and sled-toboggan combination are of a size suitable for the movement of supplies for a small unit, as is the Finnish-type *akja*, or canoe-shaped toboggan. These smaller sleds are suitable for transportation of extra

supplies other than those carried in the individual packs and may be used for evacuation of wounded, but there has been no sled developed that is small enough for each man to have one for his own use.

The accompanying illustrations, which are taken from an article by Ben Hunt in *Boys' Life* magazine, suggest a "Packrack Sled," somewhat reminiscent of the small hand sleds used over a century ago by the Indians in the Great Lakes region, and in the northeast parts of the United States. The "Packrack Sled," however, is a combination packboard and hand sled, and very versatile for use in winter field operations. It displays all the advantages of the packboard for ordinary going, or when there is insufficient ice or dry snow to warrant the use of the sled, but in a few seconds it can be converted to a small sled capable of carrying all of a soldier's bulky equipment, leaving him personally unburdened and free to take cover or prepare for instant combat action. The runners are broad enough to support a considerable load in all but the most slushy, or deep powdery snow, as long as the trail is broken ahead of the sled. When worn as a packboard the weight of the sled is comparatively negligible and allows the load to ride high on the shoulders in the manner that is considered most desirable for the packboard. The web belts buckled across the packboard where it fits to the back increase the comfort of the load and protect the back from the hard wood. The toggle ropes may be used to lash the "pay load" between the runners.

When skis or snowshoes are worn and the "Packrack Sled" is used as a backboard, the center of gravity of the load may be raised or lowered as desired for the purpose of achieving proper balance. Since the principal purpose of the "Packrack Sled" is to relieve the individual of as much burden as possible when it counts most, and since it is small in comparison to the sleds now in use in the armed forces, individual packs drawn on these sleds allow distribution of more unit supplies and equipment among all the men of the unit. In hilly country where down-hill brakes may be necessary, two men working together may lash



Green Elm, Ash or Oak.

their sleds together and take turns towing and breaking trail. While one tows, the other attaches a toggle rope and acts as brakeman.

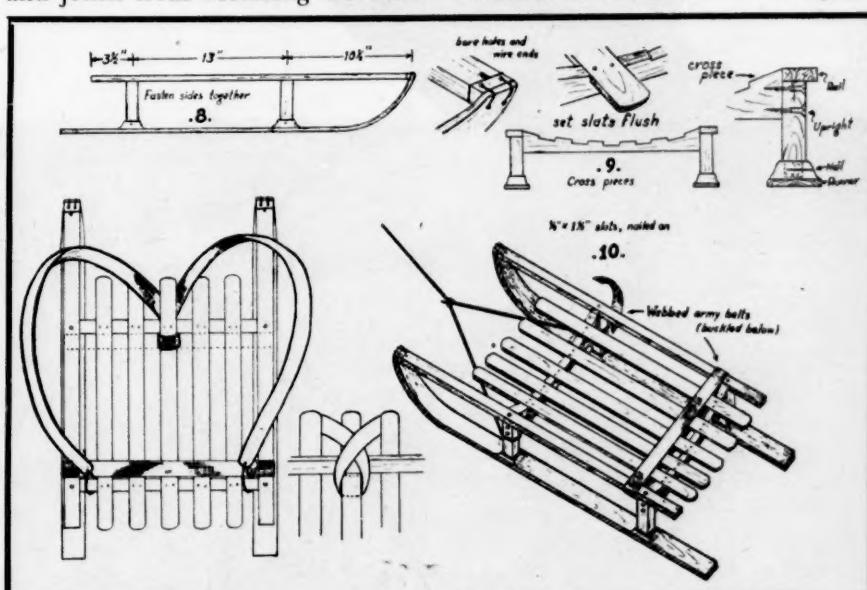
When halted, or in the defense, and when the bottom is dropping out of the thermometer, a small hand sled of this type can be most valuable for bringing supplies and ammunition forward from the rearward supply points. In moving mortars, machine guns and ammunition into or out of position, it allows for speedier movement with much less back-breaking effort than the hand carried load over snow or ice.

In evacuating wounded, a stretcher lashed to two sleds, bob-sled fashion, allows the litter bearers to move much more rapidly than when hand-carrying the litter and with much less fatigue. The evacuee is well bundled in a sleeping bag and extra blankets are lashed to the litter. There is far less danger of jolts and bumps for the evacuee and less danger of additional injury caused by being spilled from the litter when litter bearers slip or fall on the trail. When used in this manner, toggle ropes are attached to the rearmost sled for braking purposes.

The sleds are simple of construction and may be built or repaired in the field by a Marine who has access to a few simple tools. Any unit staging for possible winter or Arctic operations should have organizational tools available, as well as materials for repairs to sleds and other winter equipment. In building the sleds, the hardest wood

When halted, do not drop the loaded sled, but ease it to the ground. Do not let it stand overnight on its runners, since they may freeze to the snow or ground, and there is danger that the runners may be split or broken while freeing them. Stand the sled on its end or on its side and use it as part of the windbreak when preparing a bivouac. Leave the sled outdoors in extremely cold temperatures and treat it as you do your weapons and other equipment that might be damaged by sweating when indoors. Extreme cold makes wood brittle and, if there is moisture in the wood, the slats and runners are easily broken.

It is not suggested that the "Pack-rack Sled" should take the place of any of the larger motorized over-snow vehicles or animal drawn sleds now in use or undergoing tests. But it is felt that there is a definite need for a small individual sled to supplement the larger types. The dog sled, sled-toboggan combination and the *akja* all have their place and special good qualities, and when available are quite valuable for unit or group uses. However, the larger sleds make little provision for lightening the burden of the individual since they are too large and unwieldy for individual use. A need for a small individual sled is foreseen for use when the unit is broken up and the personnel separated and, since it is also a packboard, it can be employed as such when snow conditions are not favorable for runners. US  MC



Boys' Life Magazine

FADE



THE ABILITY OF THE LANDING force to seize and consolidate the beachhead expeditiously is the true measure of the success or failure of the modern amphibious attack force. It is generally accepted that this era of modern warfare dictates that the landing force possess optimum power and mobility or else it is doomed to failure. Such failure nullifies the months of planning and the costly expenditures in capital ships, aircraft, landing craft and

By LtCol S. H. Fletcher



IN THE LANDING FORCE

One of the oldest weapons known to man is
still a potent weapon in the FMF arsenal

personnel incident to placement of the landing force on the hostile beach.

It is only by killing or incapacitating the enemy that battlefield objectives are secured. Incapacitation is further defined in a military sense as the removal of an enemy's capability or will to resist.

But often a tenacious enemy, well dug in, presents a problem not easily solved by the use of conventional weapons. However, there is an answer to this problem. This answer lies in a weapon that has seen combat service from the Biblical days of Sampson throughout every major conflict to the present, with maximum, though far from optimum, exploitation being achieved in the Pacific Theater during World War II.

This weapon is *flame*. Flame is one of the most awesome munitions ever employed and its antipersonnel target effect knows no equal. The psychological fear of flame is present in every individual on the face of the earth. Proper employment of

flame against defended tactical objectives has inevitably been successful where conventional munitions have failed to dislodge a stubborn enemy.

A true understanding of the combat potential of flame as an anti-personnel weapon necessitates an insight into the historical development of flame munitions and their employment in the attainment of tactical objectives.

World War I saw limited employment of flame through utilization of portable flame throwers. The initial recorded employment was by the Germans in 1915, followed thereafter by the French and British. There is no recorded instance, however, of it having been considered a decisive weapon in the outcome of any engagement during World War I.

Foreign development of flame munitions continued after World War I and the Italian Army demonstrated vehicular mounted flame throwers in 1937. Both the Germans and Italians achieved con-

siderable success with such weapons in North Africa against vehicles and fortifications.

Evaluation of these North African successes resulted in initiation of American development, in 1940, of a portable flame thrower. The Chemical Warfare Service was then assigned responsibility for development, manufacture and issue of a portable flame thrower.

The first model to be standardized was designated the Flame Thrower, Portable, M1. It employed an un dependable electrical ignition system and unthickened fuel consisting of gasoline. Range of this weapon was very short. Development of thickened fuel to afford increased range followed in 1942. The M1A1 portable Flame Thrower, adapted to use thickened fuel consisting of jellied gasoline (but burdened with the same faulty electrical ignition system as the M1) was placed in quantity production. This weapon was utilized in combat in the Southwest Pacific in 1943 but proved almost impossible to be maintained in





Peleliu—an MK1 on an LVT: fragile and vulnerable

serviceable operating condition. The next model, designated the Flame Thrower, Portable M2-2, became available in 1944 and had a vastly improved cartridge-type ignition system. This latter model saw extensive use throughout World War II and an improved and lighter model is in use today.

The advent of the M2-2 Portable Flame Thrower in the Pacific represented the first attainment and realization of the potential of flame against a stubborn enemy who refused to be routed by conventional flat trajectory small arms and fragmentation artillery and mortar shells.

Credit for the initial successful employment of flame warfare in World War II rests with the combat engineers of the 18th Marines, 2d MarDiv operating against defensive fortifications on Guadalcanal. Two Marine engineers moved up under cover of supporting rifle and machine gun fire to flame a bunker from a range of 25 yards. All enemy fire was silenced and five enemy defenders were found dead. Army units made fairly extensive use of the M1A1 in securing isolated enemy strongpoints in the seizure of Munda airfield on New Georgia. The Bougainville landing in 1943 found the portable flame thrower a recognized organic infantry weapon. A notable instance of the demonstrated effectiveness of flame is recorded in the action reports of the 21st Marines following the landing on Empress Augusta Beach. A fortified cave on Hill 1000 had held up further advance for a week during which it received a merciless pounding by close support dive bombers, artillery and mortars. Finally, a team of six portable flame throwers, with appropriate infantry support, was ordered in following an arti-

lery preparation. The enemy position was secured in the space of a few minutes with no survivors—mute evidence of the awesome lethality of flame when properly and effectively employed. This and other like engagements proved conclusively that flame weapons, when properly employed as a member of the infantry weapons team, represent a significant contribution to the overall combat effectiveness of that team.

Heartened by these successes, attempts were made to adapt the M1A1 Portable Flame Thrower to vehicular mounting. An improvised adaptation for the light tank was employed on Bougainville and on New Britain. The inherent maintenance difficulties of the M1A1 Flame Thrower proved its undoing and such employment was highly unsuccessful. The battle for Tarawa, however, demonstrated conclusively that, although flame was the answer to dislodging a fanatical, dug-in enemy, the resultant casualties in operators of the portable flame thrower were prohibitive. A means must be devised whereby a flame weapon could close to within flaming distance of a defended objective—the obvious answer was an armored flame thrower with increased range capabilities.

Concurrent development by Army, Navy and Marine personnel in Hawaii resulted in adaptation of the British Ronson vehicular-type flame thrower to the light tank. The resultant main armament flame tank was designated the Satan. Twelve Satans were successfully employed by each of the 2d and 4th Marine Divisions throughout the battle for Saipan and were a part of the assault wave in the Tinian landing.

The concept of coordinate gun tank-flame tank employment as part of the tank-infantry team was

evolved during the battle for Saipan. Flame tanks were employed in direct support with gun tanks. The resultant extension and broadening of the effectiveness of the tank gave the Marine tank-infantry team a combat potential it had never before realized.

The Peleliu operation saw utili-



Iwo Jima—traine

zation by the 1st MarDiv of LVTs mounting the US Navy developed MK1 flame thrower. The flame thrower itself proved fairly satisfactory, but again the inherent fragility of the LVT for extended land operations and its vulnerability proved its undoing. No further consideration was afforded the LVT as a flame thrower mounting vehicle.

Satan flame tanks were employed by the Army XXIV Corps in the Leyte operation, but the rainy season and mud immobilized all mechanized weapons and the fighting soon reached mountainous terrain where tank employment of any sort was impossible.

Development of a satisfactory mechanized flame thrower had continued in Hawaii under the supervision of the Chemical Warfare Service, Pacific Ocean Area. Such development resulted in the design and construction by a composite group of Navy Seabees, Army and Marine technicians of sufficient main armament medium flame tanks, based on the M4A3 Tank, to equip the V Marine Amphibious Corps for its landing on Iwo Jima.

The 4th and 5th Marine Divisions landed on the southeast coast of Iwo Jima on 19 February, 1945. Each division was equipped with

four main armament flame tanks. Difficult terrain and deep volcanic ash precluded employment of the flame tanks on the first few days. By D plus six, however, the Marines had become dependent on their flame tanks and constantly requested their use.

The action reports of all three

proved an excellent weapon for use in assaulting emplacements, pill-boxes, caves and fortified positions. However, because of the nature of the Japanese defenses, the Marines found, just as they had at Tarawa, that it was difficult to approach to flaming positions. Resultant casualties were almost prohibitive. In fact, during the latter stages of the operation it was difficult to keep flame throwers manned with experienced personnel.

The Japanese troops defending Okinawa experienced their first terrifying experience with flame on D plus 18. A combined gun tank-flame tank-infantry assault was mounted against a 460-foot hill known as Rocky Crags. There, 31 flame tanks expended 3,500 gallons of thickened fuel in the initial assault and continued in support throughout the six-day battle for the Crags. Subsequent attacks on other objectives found the Japanese often willing to withdraw when confronted with flame tanks, and in many instances would concentrate their fire on flame tanks rather than gun tanks.

Main armament flame tanks of the 713th TkBn were in constant demand by both Army and Marine units. The 713th Battalion was in action for 70 days and was officially credited with having killed nearly 5,000 Japanese and capturing 49. At the same time the battalion lost but seven men killed and 110 men wounded, injured and missing. Of the 54 tanks, 41 were knocked out, although 26 were repaired and returned to action.

Okinawa saw a unique adaptation of the main armament flame tank. The Chemical Warfare Service in Hawaii had devised a 400-foot hose attachment which was used to bring flame to bear on inaccessible targets on tops of cliffs and escarpments. In one instance, a hose was dragged to the top of a cliff overlooking the sea. Flame was then fired out to sea to be blown back into caves below where the enemy had holed up thinking themselves safe.

Unit commanders within the Army XXIV Corps and the Marine III Amphibious Corps endorsed the main armament flame tank as one of the most effective weapons at their command.

Within the European Theater, the Germans were first to effect tactical employment of flame. Their headlong dash through France was spearheaded by flame-throwing tanks. Soon thereafter, the Belgian fortress of Eben Emael was assaulted and captured by the Germans in an incredibly short time. Following an artillery bombardment, a coordinated assault was launched consisting of parachutists, supported by a battalion of trained demolition engineers, who combined the employment of flame and demolitions. The defenders were forced to surrender within a few hours.

Spurred on by these German successes, the British placed development of flame munitions on a priority basis in August 1940. This development eventually resulted in the placement of an order in Canada in

trained operators didn't last long

Marine divisions on the Iwo Jima operation unanimously recommended inclusion of a quantity of improved main armament flame tanks in the organic equipment of the division tank battalion. The obvious improvements desired were longer range and greater thickened fuel capacity.

Portable flame throwers likewise saw extensive usage by the infantry on Iwo Jima. Each infantry battalion was equipped with 27 portable flame throwers which permitted optimum flexibility of employment. It



Europe—the Crocodile seared its way to victory

1942 for production of 1,300 vehicular flame throwers mounted on the Bren Gun Carrier. This was followed in 1943 by production of its British counterpart, the Wasp, which likewise was mounted on the Bren Carrier.

The British recognized the need for a flame-throwing tank to complete their family of vehicular-mounted flame weapons. Such a weapon was developed and designated the Crocodile. Its design provided for transport of the flame fuel and pressure systems mounted on a two-wheel trailer towed behind a medium gun tank, while the flame gun was mounted on the bow of the tank. Development of the Crocodile was completed in April 1943; production was initiated and more than 800 were produced by the end of hostilities.

The Crocodiles were initially employed on D-Day at Normandy by elements of 141st Regiment, Royal Armoured Corps. The remaining elements of the 141st were landed in late June and were deployed along the whole of the Second Army front. The British employed much the same tactics as the Marines had in the Pacific Theater.

These Crocodile successes gave impetus to the lighter Bren Carrier-mounted Wasp. The Canadian Army encountered strong enemy resistance in their advance southward to Falaise. The fierceness of the enemy defensive fires precluded infantry assault in the absence of supporting artillery. A carefully coordinated attack, spearheaded by a section of three Wasps covered by machine gun fire was launched. The enemy, many in flames, ran screaming from their positions and all enemy fire ceased; 250 prisoners were taken with only 12 Canadian casualties, none among the Wasp crews.

The Battle of Normandy drew to a victorious close and the next employment of flame was in the battle for the Channel ports.

The 49th and 51st British Divisions were assigned to reduction of Le Havre, a garrison of 12,000 Germans. The armored assault team, comprised of mine-clearing tanks, gun tanks and flame tanks, was employed and the formidable fortification was overrun. The Germans endeavored to stand up to flame in



Okinawa—as bugs were ironed out employment became SOP

the open, but as one of the Crocodile commanders reported, "they were soon reduced to blazing, shrieking and demented individuals, totally incapable of resistance." The enemy condemned the Crocodiles as unfair, and one German officer prisoner reported that an entire platoon was caught in the open and burned to death.

The US Army was faced with the reduction of Brest soon thereafter. Having no flame tanks of his own, General Bradley requested and received one squadron of Crocodiles. Again the combined gun tank-flame tank-infantry assault was employed and Brest was reduced with a minimum of infantry casualties.

It must be noted at this time that the US Army made limited use of flame in conduct of operations in the European Theater. Flame tanks of American manufacture were unavailable due to an understandable reluctance of those in authority to authorize conversion to flame tanks of the limited available quantity of gun tanks.

In Europe the tank assumed outstanding tactical importance and was employed in combination advance and maneuver. Under such circumstances, the United States' scheme of maneuver provided for by-passing targets on which flame would normally have been employed. All objectives could not be so by-passed, however, and it is the inevitable conclusion, supported by action reports of the British and Canadians who were similarly en-

gaged, that availability of flame for employment against such objectives would have saved many American lives.

The British and Canadians made extensive use of the Crocodiles and Wasps throughout the remainder of the war.

The Italian Theater witnessed the largest flame attack in all history. Field Marshal Alexander was confronted with the formidable and well fortified line of the Senio River and he resolved to provide the Eighth Army with all the flame support which could be mustered.

Portable flame throwers and 28 Crocodiles and 127 Wasps were assembled confronting the massive, enemy-held floodbanks on the west side of the 90-foot Senio River. Wasps and Crocodiles were positioned at 70-yard intervals along the five and a half mile front of the two attacking divisions. The attack was timed for the evening of 9 April, 1945. An intense artillery bombardment was laid down. At H-Hour the artillery fire was lifted and the Wasps and Crocodiles moved forward and poured a fiery Niagara of liquid fire on the enemy positions. The assaulting infantry crossed the river in boats through the midst of the flames and charged the blazing enemy position. Enemy resistance was completely shattered and total casualties in both divisions were 43 killed and 279 wounded. The Eighth Army was convinced of the combat potential of flame and fully utilized the available Wasps and Crocodiles.

throughout the remainder of the Italian campaign.

History has thus proven that flame is indispensable to success in land warfare if such success is to be achieved with minimum loss of infantry casualties and within the minimum time.

The foregoing is particularly applicable to seizure of the beachhead in amphibious operations. The enemy beachhead is inevitably well defended and every vestige of enemy resistance therein must be wiped out. Targets cannot be by-passed by the "broad arrow" sweeps of columns of armor to be dealt with at a later date. The mission of the landing force is to seize the beachhead and render it secure for landing of the consolidating forces.

Flame weapons must be provided within the landing force that will permit bringing flame to bear on every possible tactical objective. Attainment of this capability may necessitate reorganization of the structure of the landing force, but it is believed that such reorganization may well be warranted. Our present family of ground weapons includes only two flame weapons, the flame tank and portable flame thrower. These are considered insufficient and development or adoption of certain new types is advocated.

With regard to our present types of flame weapons, the portable flame thrower is essentially the same as that of World War II. It represents a man-killing load, its range is unacceptably short and resultant casualties amongst operators is prohibitive. It is imperative that the weight of this weapon be reduced and its range increased.

Progress since World War II has resulted in the Army Chemical Corps developing for the Marine Corps a main armament flame tank that knows no peer. The basic chassis is that of the modern medium tank and it has a thickened fuel range that was hitherto considered impossible. This flame tank is a model of simplicity and, unlike its predecessors of World War II, will be a maintenance man's dream. It will be possible to convert gun tanks to flame tanks and vice versa in the field by the simple expedient of exchanging turrets. Thus, maximum flexibility in employment of

the tank as a weapon is achieved. Modern servicing equipment is under development that will permit this flame tank to be serviced immediately behind the front lines and returned to battle in a minimum length of time.

However, a wide gap still exists between the potential of the portable flame thrower and that of the main armament flame tank. To fill this gap, we can well borrow a page from the Canadian and British history of World War II, namely that pertaining to the carrier-type flame thrower, the Wasp. True, the Wasp is not the battleship slugger of the main armament type, capable of closing head-on with almost any objective; but by comparison with the portable flame thrower, its capabilities are tremendous. The Wasp type has extreme mobility, low silhouette and excellent range characteristics and could easily be provided all around armor protection against small arms fire. These qualities enable the Wasp type (except under extreme conditions of terrain) to effectively flame targets that would normally fall the lot of the relatively exposed portable flame thrower operator.

Inclusion of suitable numbers of the Wasp type flame thrower within the infantry battalion or regiment could be effected with minimum additional personnel requirements. It is believed that such action is justified and warranted, even at the expense of some of the portable flame throwers presently provided.

Flame warheads for our larger mortars and rockets are likewise considered a potential. Close air support, with napalm bombs, is not always available to neutralize and reduce targets that are invulnerable to conventional high-explosive and fragmentation munitions. Mass employment of such a flame munition should produce comparable target effect to that of the napalm bomb and would place the capability of long-range delivery of flame in the hands of the infantry commander.

A factor we must not overlook in planning for the amphibious operation of the future is the Communist disregard of human life in the attainment or defense of tactical objectives. Whichever side provides its infantry with the family of most lethal and death-dealing weapons will emerge victorious. Flame weapons have proven conclusively that they are an important member of such a family of weapons; their ability to kill is surpassed only by toxic gases.

Amphibious operations are a very real part of modern war. Our landing force must assault that beachhead fully capable of tackling any and all objectives on a superiority basis. Since superiority in numbers is not normal under such conditions, it must be compensated for through the weapons provided. True balance in target effectiveness of ground weapons within the landing force must be attained and flame weapons must be weighted heavily in the scales.

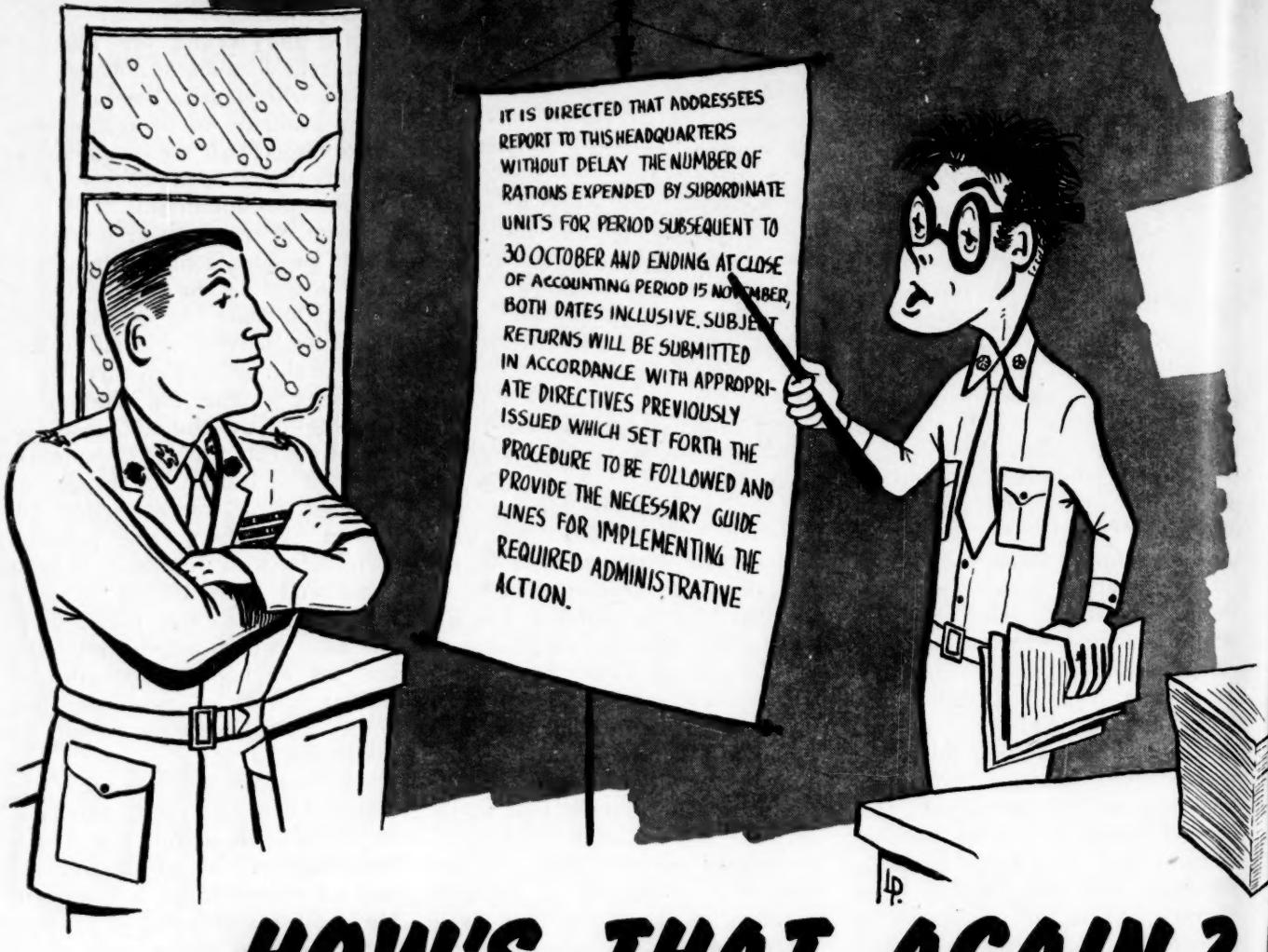
USMC

Today—T-67, a main armament flamer

R E Harris



35



HOW'S THAT AGAIN?

By Col R. McC. Tompkins

"Now, then, Major Noetall, I understand that you are an expert in the field of military writing."

"The answer to that, sir, is in the affirmative. Modesty notwithstanding, it is believed that there are few, if any, better qualified."

"Would you care to tell us the title of your most recent book, Major?"

"Come, come, sir. I'm not an author. I've never even written an article for the GAZETTE. My concern is in the field of cliches of military writing. That is to say, official memoranda, orders, directives, letters, bulletins and so forth."

"How long have you been doing this work?"

"Long enough, sir, so that I can not only automatically write the proper language, but I can also speak it. In our shop the ability to

talk the language puts a man in the expert class."

"What's this 'shop' you refer to, Major?"

"We always call our office a 'shop,' sir. Lends a nice easy note to the conversation and shows an informality that's ordinarily not easily obtained. It's one of the expressions we always use when dealing with the Indians."

"Indians?"



"Yes, Indians. You know—Peons. The people who try to puzzle out

what you are talking about, or what you had in mind when you wrote the directive."

"That's very interesting, Major, and I think it will give a good background for the rest of our interview. Now to begin our session here today could we talk about . . . "

"You mean 'kick around,' don't you?"

"I guess I do. Well, Major, if we could kick around the problem of writing a directive of some kind, I think it would be most helpful to our fine audience here. How would you handle the order: 'Report immediately number of rations used 1-15 Nov inclusive?'"

"That's an easy one. Your order would read: 'It is directed that addressees report to this Headquarters without delay the number of rations expended by subordinate units for

period subsequent to 30 October and ending at close of accounting period 15 November, both dates inclusive. Subject returns will be submitted in accordance with appropriate directives previously issued which set forth the procedure to be followed and provide the necessary guide lines for implementing the required administrative action.' There. That ought to fox them, don't you think?"

"Splendid, Major. That would take quite a little interpretation I imagine."

"Thank you, sir. It is understood, of course, that what I have just given you is just a sample, directive-wise."

"Directive-wise?"

"Yes, directive-wise. Tacking 'wise' onto a noun is ample evidence that you can get around in any higher headquarters. By the same token, you have naval gunfire-wise, fiscal-wise, security-wise and almost anything else that you can think of."

"Very interesting, Major. I'll just make a note of that, if you don't mind. Can't ever tell when I might be ordered to the Pentagon. Now, if we might move on to another aspect of . . ."

"Just a minute, sir. Before we finalize anything, it is felt that the terms of reference must be clearly staked out so that there exists not the slightest vestige of doubt as to the applicable methods that are to be used in the session here today. Will you buy that?"

"I beg your pardon?"

"I mean, what's your reaction? Do you go along with that?"

"Well, I . . ."

"Suppose, sir, I carry the ball while it is determined what areas of agreement and disagreement obtain, although it seems apparent that certain fringe areas—grey areas, if you will—are almost certain to exist and will naturally lend themselves to a complete and objective type survey, as well as facilitating our approach to the whole ball of wax. Are you with me on that?"

"I'm afraid I'm a little dim, Major. You lost me about the second turn."

"You've probably been with troops too long. Let me put it another way. It is recommended that

a purely hypothetical case be examined in order to obtain a reading on the problem at hand, as well as to rough out a position that can be justified eventually in the light of future events. To this end let's set something up and try it just for size. Agreed?"

"Well . . ."

"Good. It is mandatory that the frame of reference be clearly defined. Let's assume, in order to give us something to shoot down, that we are kicking around a problem involving procedural matters attendant upon a steering committee meeting that is scheduled to convene prior to an up-coming governmental-level policy meeting in the month of January-February of next year. Are we getting any closer together?"

"To be honest with you, Major, I think my foot has gone to sleep."

"It does not appear, sir, that your problem falls within the context of the matter presently under consideration. In view of this factor, it is suggested that the problem at hand be faced up to and a solution palatable to both sides be sought."

"Just a second, Major. What happened to that hypothetical case you were talking about? My leg is asleep."

"Let's go back to that hypothetical case. I'm glad you reminded me. Permit me to recap what has already been covered just to be sure that we're on the same footing."

"Both my feet . . ."

"My reading of the point at hand, sir, is to couch it in the plainest possible terms and because of the complexities inherent in exploring a problem of this magnitude and scope, that it becomes absolutely mandatory that it be taken in hand forthwith and, in any case, well prior to the anticipated quadrapartite meeting scheduled for the 4th quarter of Fiscal '55."

"Don't you think it's awfully stuffy in here, Major?"

"Have you, sir, ever been in the Pentagon when the air conditioning has broken down? Why, I remember one day last summer . . ."

"I'll swear I feel sort of dizzy. What were you saying, Major?"

"I was going to tell you about the day the air conditioning went off, but I'll save that for another time



when we discuss field service. Where were we? Oh, yes, I recall. To face up to the present and more immediate problems, notwithstanding a natural inclination to await finalization of impending events, as well as existing pertinent directives, it appears mandatory to screen the entire matter with the utmost care. It is possible that, in the course of such survey, a position can be developed that will subsequently be fleshed out in the form of implementing directives of sufficient detail to permit cognizant agencies to take the required action. What do you think?"

"I think if I could stay on my feet I might be able to get a draw."

"No frivolity, please, sir. In view of the present terms of reference, it must be manifest that such may or may not be the case, depending on certain variables that are obviously beyond our competence, for, like an iceberg, seven-eighths of this whole problem will, and must, remain submerged until a suitable course has been staked out and the matter eventually resolved. That's my reading of this problem. How are you feeling now?"

"Well, Major, I've always said there was nothing the matter with me that a little money wouldn't cure, but now I'm not so sure. What was it that you were saying?"

"I don't exactly recall just what I had in mind, although come to think of it, I may have been developing a preliminary position relative to comparative know-how."

"Could we please have the lights on, Major?"

"Not so fast, sir. That problem must be considered dollars-and-cents-wise, otherwise the relative merits and the anticipated results may well become submerged and, in fact as well as in theory, totally lost to view."

"The sooner the better. You know, Major, I think I'm paralyzed."

"Don't be alarmed, sir, you are merely becoming acclimated. If you will just take two or three deep breaths that oppressive feeling will disappear and you won't have a thing on your mind. There, now, don't you feel better? You've completely lost that keen, alert look that you had when I first came in here a few minutes ago."

"As a matter of fact, Major, I feel quite numb. It is a matter of considerable regret, however, to note that the time allotted to this interesting and instructive period is running out. Would it be practicable, Major, in the short time remaining to us, to formulate any guide lines, or, as might be said, signposts, along

that the beginner practice writing the longest sentences of which he is capable of composing. Attention must be devoted to this single aspect of our craft until it becomes second nature to write a sentence running at least ten typewritten lines."

"Single-spaced, it is presumed?"

"That's right, sir. A sentence that is not less than ten single-spaced typewritten lines, for the very good reason that, when you can do this at will, you are ready for the next step, one which admittedly presents certain complexities, but one which can be learned and consists, to put it as plainly as possible, of never employing an active verb if a passive can be employed instead. Do you follow me?"

"Crystal-clear listener-wise, Major. Do you care to give us an example?"

"Well, instead of saying 'I recommend,' or 'I believe,' the terms to be employed are 'It is recommended,' or 'It is believed' or, and this is even better, 'It is felt.' Likewise it is recommended that frequent recourse be had to such expressions as 'it would seem that,' or 'it would appear that' and so on. Do you get the picture?"

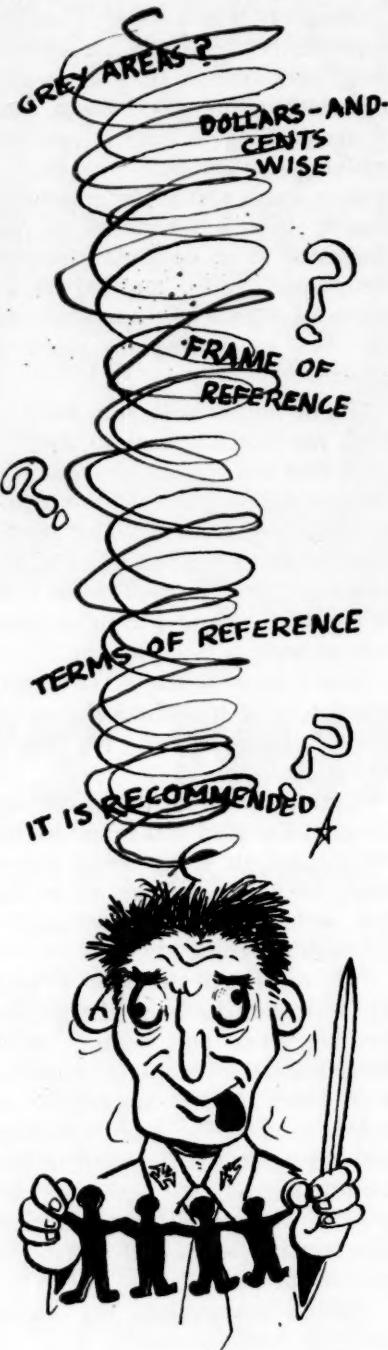
"Affirmative, Major. Anything else?"

"The final step, sir, in becoming an expert in our art is, of course, the inevitable result of writing the long, tortuous sentences filled with all manner of cliches, platitudes and general nonsense. After months and even years have been devoted to writing in the approved style and this mode of expression has become second nature, you will come into your own—you will begin talking the same argy-bargy that you have been writing. That about sums it up, sir."

"It is to be regretted, Major, that our time is expended, but it would not be amiss to conclude that rarely, if ever, has time been better spent and it is certain that the action heretofore enjoined will be undertaken by all concerned without appreciable delay, both in the spirit, as well as the letter, of what has been so well said here today. Thank you, Major."

"It is, needless to say, a pleasure, sir. It might be noted that you are what we call a quick-learner."

USMC



the way that must be trod by those who would make their mark in that particular field of endeavor which owes so much to your brilliant leadership and pioneering?"

"Why, yes, it is possible, sir, to hit a few high spots of the art. In the first place, it is recommended



DEFENSE OF THE ARTILLERY POSITION AREA

“How can I perform my mission in support of the infantry and still defend my position against ground attack?” This question has added to the grey hairs of artillery commanders through the years. In its early days, when artillery accompanied or preceded the infantry in the attack and was a part of the line in defense, there was no problem. However, with the advent of indirect fire methods and the increasing distances between supporting guns and supported riflemen, the gunners soon found that enemy infiltrators and break-through columns considered them as prize targets. Since that time it has been repeatedly shown that artillery can defend itself when necessary. This has, however, been too often accomplished more through individual courage and stubbornness than by any thorough planning or preparation.

The stumbling block is simply that, while a rifle company commander knows that he must expect

attack, the battery commander is preoccupied with his basic supporting mission and knows that 99 per cent of the time he will not be subject to ground attack. The usual result is that enough security elements are put out to guard against complete surprise, but when an attack does develop the battery starts its fight in “last ditch” circumstances, largely disorganized, in or near the gun positions. Very seldom is a co-ordinated fire plan in effect and usually a gun position occupies the poorest possible terrain for a ground defense.

As a case in point; during the Chosin withdrawal in 1950, Fox Battery, 11th Marines occupied a position in the low ground a few hun-

dred yards south of the town of Chin-hung-ni. At the western edge of the battery area a ridge rose abruptly. An estimated squad of Chinese occupied the crest and began to deliver small-arms and machine-gun fire into the position. The only physical security offered by the battery on this flank was six or seven men from the battalion ammunition section dug in about one third of the way up the slope. Their fire was ineffective against the enemy on the crest. However, the enemy could bring pin-point fire to bear on any point in the battery area. Fortunately, one howitzer was able to return the enemy fire and caused them to withdraw. The writer was present at the time and the people on the gun were quite jubilant—but, if the Chinese had chosen to concentrate their fire on *that* howitzer, it would have been very nearly impossible to have delivered accurate fire. No maneuvering force was available to contest the enemy's possession of the

By 2d Lt K. L. Smith

ridge. Fox Battery avoided heavy casualties more through luck and the enemy's mistakes than through any adequate defense.

The ideal solution to the problem depends greatly upon whether you are a division commander concerned with creating the most effective striking force, or a battery commander concerned with keeping your scalp. A rifle company with each battery would be nice, but a little impractical. An effective compromise can be found, however, and I hope that such a solution is presented here. It is based upon the following points:

(1) The defense must not preclude the accomplishment of the primary mission.

(2) It must be done within the limits of existing Tables of Organization and Equipment.

(3) It can be implemented on a

battery or battalion level.

(4) Considering the ability of our potential enemies as infiltrators, a need for improved position area defense exists.

A supplementary organization seems to supply the answer. If organized and trained, sufficient personnel are on hand in the battery to maintain any but the heaviest firing schedule, and at the same time provide a very respectable ground defense.

• A SUGGESTED organization for a divisional 105mm Howitzer Battery follows. The general concept is a rifle platoon composed of men from the howitzer sections and a machine gun platoon made up of other available personnel. Fire teams have been reinforced with a rocket launcher team; squads reduced to two fire teams. As their employment will be primarily defensive,

it was felt that it would be better to incorporate rocket launchers into the fire teams rather than to form a somewhat unwieldy third unit.

The supplementary organization shown below would lend itself to quick defense, counterattack or patrolling. Organized on a battalion level, it would provide a force of reinforced company strength capable of dealing with any situation short of total disaster.

The major point to be emphasized is that a definite organization for defense should exist. Every man should know his billet. Plans for defense and counterattack should be prearranged wherever possible. The materials are at hand but time, thought and effort are necessary to develop the plan. Artillerymen are Marines first—yes—but without organization and continued training they stand small chance against an expert enemy

US • MC

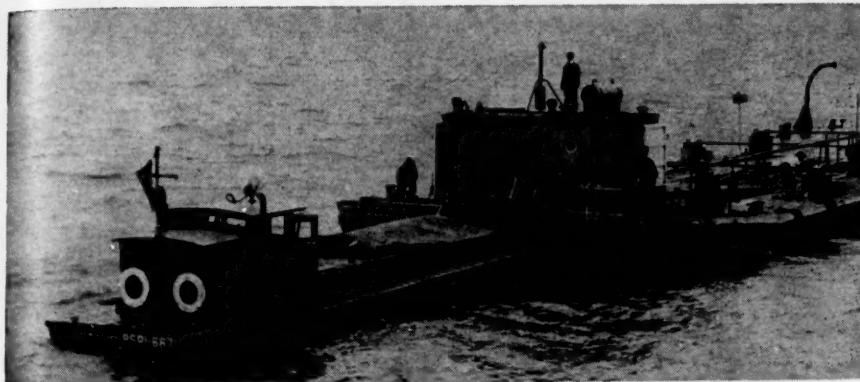
Emergency defense organization for a divisional 105mm Howitzer Battalion

No.	Rank	Defense Billet	Normal Billet	No.	Rank	Defense Billet	Normal Billet
1st Platoon							
1	Lt	Plt Ldr	Asst Exec	1	Pvt	Ammunition	Auto Mech., Mess Driver, Truck Driver
1	TSgt	Plt Sgt	Gunnery Sgt	1	Cpl	Squad Ldr	Barber
1	Pvt	Runner	Field Music	1	Cpl	Gunner	Cook
1	Sgt	Squad Ldr	Auto Mechanic	1	Cpl	Asst Gunner	Cook
1st Squad							
1	Cpl	FT Ldr	Truck driver from Howitzer sect.	3	Pvt	Ammunition	Messmen
1	Pvt	AR Man	AR Man from howitzer section	1st Squad (Cont'd.)			
1	Pvt	Asst AR Man	FA cannoneer from howitzer sect.	1	Cpl	Squad Ldr	FA Weapons Armorer
1	Pvt	Rifleman	FA cannoneer from howitzer sect.	1	Cpl	Gunner	Truck Driver (Ammo Sect.)
1	Pvt	Rocket Launcher Gunner	FA cannoneer from howitzer sect.	1	Pvt	Asst Gunner	FA Cannoneer (Ammo Sect.)
1	Pvt	Asst RL Gunner	FA cannoneer from howitzer sect.	2	Pvt	Ammunition	FA Cannoneer (Ammo Sect.)
2d Fire Team							
Same as first				2	Cpl	Squad Ldr	Instrument Operator
				1	Cpl	Gunner	Instrument Operator—Driver
				1	Pvt	Asst Gunner	FA Cannoneer (Ammo Sect.)
				1	Pvt	Ammunition	FA Cannoneer (Ammo Sect.)
2d Squad							
1	Sgt	Squad Ldr	Tractor Equipment Operator	2d Section (.30 cal.)			
Fire Teams same as 1st Squad				1	Cpl	Section Ldr	FA Weapons Armorer
3rd Squad							
1	Sgt	Squad Ldr	Property NCO	1st Squad			
Fire Teams same as 1st Squad				1	Cpl	Squad Ldr	Truck Driver (Ammo Sect.)
2d (Machine Gun) Platoon				1	Cpl	Gunner	FA Cannoneer (Ammo Sect.)
1	WO	Platoon Ldr	Maintenance Officer	1	Pvt	Asst Gunner	FA Cannoneer (Ammo Sect.)
1	Sgt	Platoon Sgt	Local Security Sgt	2	Pvt	Ammunition	FA Cannoneer (Ammo Sect.)
1	Sgt	Infantry Weapons	Infantry Weapons Armorer	2d Squad			
Armorer				1	Cpl	Squad Ldr	Instrument Operator
				1	Cpl	Gunner	Instrument Operator—Driver
				1	Pvt	Asst Gunner	FA Cannoneer (Ammo Sect.)
				1	Pvt	Ammunition	FA Cannoneer (Ammo Sect.)
1st Section (.50 cal.)				The following personnel would remain to maintain supporting artillery fires:			
1	Sgt	Section Ldr	Auto Mechanic	1	Capt	Battery Commander	
1st Squad				1	Lt	Executive Officer	
1	Cpl	Squad Ldr	Auto Mechanic	1	MSgt	First Sgt	
1	Cpl	Gunner	Tractor Equipment Operator	1	TSgt	Mess Sgt	
1	Cpl	Asst Gunner	Truck Driver	1	Sgt	Cook	
1	Cpl	Ammunition	Truck Driver	1	Sgt	Recorder	
6 Howitzer Sections composed of:				1	Sgt	Chief of Ammunition Section	
				2	Cpl	Radio Operators	
				2	Cpl	Radio Operators—Drivers	
				1	Pvt	Wireman	
				1	SSgt	Chief of Section	
				1	Sgt	Gunner	
				1	Cpl	Asst Gunner	
				1	Pvt	FA Cannoneer	

in brief

battle effects with pop-up targets simulating an advancing enemy.

According to a recent study by a research engineer at MIT for the



The Army's new plastic vessel (above), unveiled recently, was designed to meet a requirement for a flat-bottomed, self-propelled craft for use on very shallow inland waterways, weighs only 10.2 tons, can transport five tons of dry cargo and has a maximum cargo of ten tons in deeper water. It is built in 15 sections that can be shipped either by air, rail or truck and are easily assembled in the water.

George Washington University Psychologist, Doctor Francis E. Jones, is experimenting with a realistic rifle course at Fort Benning that will make more potent killers of Army marksmen. Built from discarded pinball machines, batteries and relays, the assault course will train men to deduce the location of hidden machine guns and bring effective fire on them instantly. Some targets are mounted on wheels and appear briefly like men running through trench lines. Others jump as if from foxholes. Dr. Jones maintains that paper targets do not arouse the hunter instinct (a psychological attitude in which "killer emotions" of the combat rifleman are aroused in battle). His targets are electrically controlled so that they fall over when hit. The terrain on the course is untouched so that the men do not know where the next target will appear. He is also planning to teach night firing when on the defensive by use of "canned"

American Society of Mechanical Engineers, the United States is more than four times as vulnerable to modern sea-launched air power as Russia. Figures reveal that 49.2 per cent of the urban population of the US lies within a 60-mile range from the nearest "unblockable coastal areas." For Russia the figure is only 11.8 per cent; for Europe, where massive amphibious invasions of the continent took place in WWII, 52.8 per cent.

*It's going to be a cold winter for some members of the US and Canadian Armies as they take off for Northern Canada in *Operation Frost Jet* during January and February 1955. NIKE, the supersonic anti-aircraft missile developed by the US Army, will be tested to determine the effects of low temperatures on the complex component parts of its weapons system. Selected Canadian personnel, trained at the Guided Missiles Center, Fort Bliss, Texas will man NIKE along with a limited number of US Army technicians.*

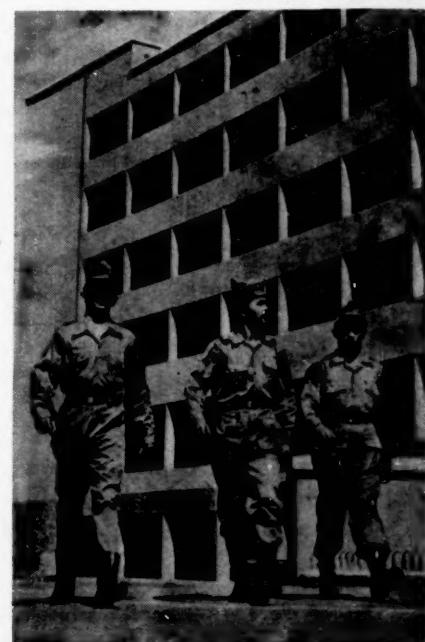
*The Army has come up with something new in rotation. Starting next year they will put into effect *Operation Gyroscope*—rotation with stability. Under this new setup, Army units will be rotated as complete outfits instead of individuals. The Army, hoping to give greater stability to the career soldier, feels that unit rotation will*

help in the form of unit continuity, unit esprit, fewer moves and more settled conditions. Expecting to rotate eight divisions a year, the complete cycle will take about 33 months. Each division will occupy its own permanent Stateside station for 31 months after each overseas tour. The same plan will be followed by regiments and battalions of the combat arms.

The Army's newly adopted bayonet, although weighing less and shorter in length, will be an improvement over the old style weapon. It is slimmer, shorter, lighter and will be just as effective as it provides for a faster recovery after being employed. Approved for use by the Army in July, 1953 the new bayonet has a 6 $\frac{1}{8}$ -inch blade compared to the 10-inch blade of the old. The new blade is also cut down in width from 1 $\frac{1}{16}$ inches to $\frac{7}{8}$ inch.

It may look like one of Hilton's newest hotels, but it's just an army barracks. It's home for Venezuelan troops stationed at Carlos Soublette Barracks near Maiqueta, Venezuela. Two buildings, one housing the offices of the command, library, assembly hall and officers' mess, the other with spacious dormitories, dining rooms, garages and parking areas, constitute luxurious living for the Venezuelan troopers.

Revista Fuerza Armadas



These factors are inter-related and receptive of various priorities in accordance with the requirements of the prospective position. The establishment of these priorities is, in effect, the construction of a yardstick by which all men are measured. Whether this yardstick exists in the mind of an employer in civilian pursuits or in the collective minds of a military selection board, its use is the same. It is, therefore, most important that an accurate yardstick be designed—for if the scale is incorrect all that follows must then be incorrect. A list of factors—six, more or less—are not in themselves a scale. They, like the terms "inch" and "meter," mean nothing until associated with a concrete distance. We must then take the factors and define their scope as units of measure.

Education—the man's intelligence level must be scanned. A record of schools attended and correspondence courses completed are only preliminary factors. The quick, inquiring, receptive mind is not subject to the definitive limits of formal education. Judgment of the individual's intelligence level must therefore be based on factors of informal or self education as well as on records of formal schooling. Here then is the first obstacle (school records are relatively easy to evaluate), informal education is quite another matter. The one is simply a review of a record, the other is a review of actual intelligence. The first being the least subject to controversy is, under present standards, the primary measure. Not the best but the easiest. To a very limited degree the measure of a man's intelligence level is ascertained by the various aptitude and intelligence tests. These tests may provide suitable figures to indicate a norm among a group; however, under circumstances where a man is judged on the basis of a test, or tests given during a restricted period of time, the result of this test can hardly be used as a fair scale throughout his career. Considering the importance of the man's physical well-being and mental outlook, an "off-day" might well brand him for life. This, of course, all tends to complicate the problem of accurate evaluation but it should be understood there is no easy way—and short cuts are likely

to produce poor material. School records and written tests have their place in the measure of a man but the most important factor remains the opinions, expressed on a properly designed fitness report, of a series of reporting seniors. Emphasis is placed on series in order that undue influence of a report, or reports, by a single reporting senior may be avoided.

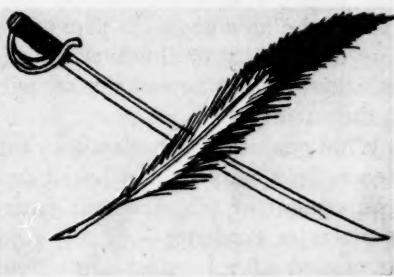
Experience—this unit is, of the six set forth, the most open to misunderstanding and misinterpretation. It cannot stand by itself for it means little unless it has performed the function of education. This is too often unappreciated, leaving experience enshrined on its own merits. Like iron ore, experience is of immense value, but only when tempered and formed. To demonstrate one facet of this misuse; it is apparent that in many quarters experience implies maturity—ma-

bute and not merely a historical recording.

Strength of Character—this unit is of great importance but should under normal circumstances, except during the early stages of a man's career, be easily discernible. Are there any personality weaknesses evidenced which, in the light of the proposed position, are unacceptable? Consideration must be given to the fact that we all have weaknesses and the term "unacceptable" is the keynote. Care should be exercised to avoid relating quiet acceptance to modest obedience and the ideal military character. The "quiet waters run deep" philosophy is of questionable value. A quiet demeanor is also the attitude of some men who have much to be modest about. Intelligence—experience—demonstrated ability—may be most properly evaluated in the light of characteristics of energy, force, flexibility and above all, decisiveness. In the age of committees, this ability to decide is a fading art which may be somewhat revived through a revitalized promotion system.

Physical Condition—in the military especially high physical requirements are necessary—as a general rule. However, the establishment of unbending physical standards is to be avoided. There is occasion when the choice between a brain and a body presents itself. In such instances where an officer with considerable service and high ability finds his career at stake before a medical survey board, more emphasis should be placed on the mind and less on the limbs. At the same time poor physical condition, such as excess weight, which is directly attributable to a lack of will to remain fit, should be entirely unacceptable.

Personal Appearance—this unit is the least difficult of all to weigh. A man's personal appearance is the property of all around him. In accepting it as the least important unit of measure it must be accepted as a necessary, and usually the first component of the scale. Good grooming both in uniform and civilian attire, a proper military bearing unencumbered by excess weight, an energetic attitude and general appearance of intelligent forcefulness clearly favors the individual.



turity connotes age, thus age has become synonymous with experience. While this contains a germ of truth the weakness of an inflexible system based on this precept is discernible. Age in itself merely denotes advancing years. The experience gained as the years advance must be valued in direct proportion to the mind's ability to properly evaluate and employ that experience decisively and with dispatch.

Demonstrated Ability—this unit supplements experience's "what he has done" with a "how he has done." Here it is important to give proper weight to the time element—"how" must be blended with "when" and "under what conditions." Ability has a current requirement—yesterday's ability represented a capacity of mind, a dexterity, a flexibility which must be present today if the ability is alive. A major problem being the retention of flexibility of thought, it is most important that demonstrated ability be a live attri-



Education



Experience



Demonstrated ability

Having set and defined the units of measurement for the selection of the best leaders it is now logical to review the raw material involved. It has been said that leaders are born, not made. This statement, although containing an element of triteness, is fundamentally sound. Some men do display outstanding qualities of command ability from the outset of their careers. Education and experience only serve to further their lead over their contemporaries. In any walk of life the man destined for success should, generally speaking, evidence his qualities well in advance of his running mates. This is not to say that the dark horse is not in the race but in life, as at the track, the favorite is seldom beaten by the longshot.

Selection for advancement should be based on individual attributes. The capacity of an officer for increased responsibility has no direct connection with his class or age. There is no magic formula which develops a man's intelligence in cadence with the other members of his class. Under the class system a man is born into the service as a member of a class—he progresses through his service life as a member of that class—he is for all practical purposes considered for promotion only with that class—he is selected for promotion over the heads of previous classes only when arriving at the top strata of command where classes have finally been reduced to individuals. In short, under the class system a member of the class of 1960 will always be considered more intelligent than a member of the class of 1961. This arrangement offers the maximum protection to established authority—a minimum

chance that command position may be reversed. It offers the least competition for advancement—no one competes outside of his relatively small class. It offers the most protection to the mediocre and the least incentive to the ambitious. It provides that the best men in the class may be advanced—it does not provide that the best men in the service will be advanced. It provides a type of security to the average officer which is not necessarily security to the nation.

What generated this class concept? Generally it may be attributed to a requirement of advancement native to a service academy—or any similar graded school system. In school, a class progresses as a unit through ever advancing formalized fields of instruction; therefore, the class segregation is effective. In the service, a class may, to some extent, progress as a unit but beyond a certain limit this progression ceases. This limit may be set at that point at which the minimum school and duty requirement for the given rank have been accomplished. Once these minimums have been realized the class delineation actually dies. The individual should then find himself in open competition with all officers of his rank. Time in rank beyond this point ceases to be an overwhelming consideration. John Doe, who has been a Captain ten years, is not automatically better suited than John Roe who has held that rank for five. Who is the most intelligent, energetic, forceful—not who is the oldest. The officer who has arrived at the point where he has indicated his ability to hold higher rank should be eligible (not academically, but actually) for promo-

tion—further time in rank proves little except the effects of boredom. He should then be placed on equal footing with all others in his rank and selected on his merit. In short, the best officer should be promoted, not the best officer in the senior class.

THE DIFFICULTIES involved in promotion on merit are understood. Administratively, the burden on the selection boards would increase in direct proportion to the increase in the number of officers eligible for promotion. This magnification should not, however, be precluded at the expense of a proper selection range. The requirement should control the mechanics of administration and not the reverse. In the interest of accomplishing this, the mechanics of administration should be guided as follows:

General or flag rank should be attained by age 40. The officer who after 18 to 20 years of service is not entirely capable of handling this rank is either the victim of improper professional training or is without the capacity for further advancement. To accomplish this goal, time in rank at all preceding grades should be scheduled accordingly.

Fitness reports should be modified to give a truer picture of the officer reported on. The forms which allow six and in some cases ten standards from "Unsatisfactory" to "Outstanding" are completely unrealistic. A scale of such length becomes cumbersome and difficult to manage. At the present time marks are generally too high. There appears to be an unwritten agreement that any mark below "excellent" places a man in jeopardy and "average"



Strength of character

sounds the death knell on his career. This acts to pile the majority of officers into a dense mass in the excellent-outstanding area where it is almost impossible to understand their true value. In evaluating an officer—he should be compared with all other officers of his rank known by the reporting senior. On the basis of this comparison it is axiomatic that the greatest percentage will be average for it is manifestly impossible for the average to be outstanding. As a method of clarifying this scale it is recommended that it be simplified to contain only three possibilities "Below Average," "Average," "Outstanding" and that it be fully understood that average is entirely satisfactory and indeed literally—*average*. "Below Average" indicates the officer is subject to elimination. "Average" indicates the officer will be considered for promotion in keeping with all other average officers in his rank. "Outstanding" indicates the officer should be schooled, assigned and selected for rapid advancement. Two or more paragraphs should be added to fitness report forms to cover: General Intelligence Level—awareness, interest, grasp of a diversity of general subjects; Ability for Expression—facility to communicate, to speak and write clearly, logically and forcefully. The phase "Recommended for promotion when due" should be stricken. An officer is either qualified for promotion or he is not qualified for promotion. The "When Due" is an express failure to make a clearcut recommendation.

Classification or reference to an individual by class or other similar group should be eliminated. Number in grade should be employed



Physical condition

only to signify rank within that grade and not as a seniority indicator for advancement.

Retirement Procedures should be designed to benefit the promotion on merit system. Officers having served 20 years and demonstrating no appreciable growth potential should be retired in accordance with the then existing needs of the service. Under no circumstances should a bottleneck be created through the retention on active service of officers who lack growth potential.

Promotion Boards should be confronted with one promotion zone which includes all officers of a given rank who have completed minimum time in rank, approximately three years. Any officer within this zone is eligible for advancement. Officers who have a below average record should be passed over. Officers who have an average record but who are not selected will not be considered as passed over until they have served a maximum time in rank as may be prescribed in the instructions to the promotion board. Officers who have an outstanding record will be selected for promotion. "Passed over" would mean: selected out of the service; retired or released.

Establish a system of educating all officers as to the proper methods of evaluating and reporting on the personnel under their jurisdiction. This is at present a fundamental weakness, in that little if any instruction is devoted to the process of evaluating men. An ideal fitness report form will still fall short of its recording purpose if the officer who fills it in does so without a full understanding of the best method of picturing the person reported



Personal appearance

on. Service schools should provide courses in this subject—regulations governing fitness reporting methods should be explicit, demanding and uncompromising.

I REALIZE in setting forth this recommendation the controversy that arises when the seniority versus merit system is broached. There are, of course, benefits to be derived from both systems; however, I believe the entire problem revolves on one point and may be resolved on that point—whether time in service (in grade) is the most important indication of a man's intelligence. In few, if any, other vocations than the military services, does time (age) hold such an overwhelming importance. Intelligence and ability should not be restricted by edict to age. This is not a question of whether youth is more intelligent than age, it is a question of comparing brain capacities rather than brain ages. Good men should be elevated—men with force, initiative, flexibility, enthusiasm and ability—time in service is not a direct measure of these. In fact, time in service under the seniority system tends to be debilitating when an officer realizes that he cannot be considered for advancement until all preceding classes have gone their way. Maximum incentive is lacking until the reward of promotion is ever present.

Henderson in his *Stonewall Jackson* said of the North in its early Civil War selection system, "They had yet to learn that mere length of service is no test whatever of capacity for command, and that character fortified by knowledge is the only charm which attracts success." USMC

with the Panzers in Russia 1941 & 43



Introduction

TO BE SURE, I HAVE HEARD MUCH of the deeds of the US Marines, those elite troops who have achieved immortal fame for themselves in WW II. Their determined assaults, their thoroughness and bravery have aroused my admiration. I have learned to know them through the study of the war histories and descriptions in literature. Therefore, when you asked me to write something for your GAZETTE, I first had several doubts if it would be really possible, or necessary, to relate to

these troops of battle experiences, since they had fought so successfully on one of the most difficult battlefields of WW II, the Pacific Theater. Since they, however, have never had an opportunity to learn to know combat with the Russian mud, the Russian winter in such a way as to become familiar with the Soviet soldier, I believe that it would be of some value to convey to them such of my practical experiences.

Not because there would ever arise an armed conflict between East and West—(because in the era of the H-

bomb this is less likely than formerly)—but because the US Marines did not have an opportunity to compare between the combat of the open spaces of Russia and the always more narrowly defined zones of operations in the jungle; between the peculiarities of the Soviet soldiers and the Japanese warriors—their former opponents.

Measured by European standards, the armed forces of the United States have always successfully achieved very extensive undertakings, be it their own Civil War or the WW I—but, especially, WW II. Therefore, I am led to believe that

Translated from the original German by Capt H. W. Henzel USMC

By Generalleutnant a. D. Fritz Bayerlein



the strategy of mechanized forces in the broad expanse of the Russian theater of operations would be of greatest interest for them.

I, myself, have experienced them as Operations Officer for General Guderian, whose Panzergruppe* was engaged in the center zone of the Eastern Front—first against SMOLENSK and later against the heart of the Soviet Union—MOSKVA.

Operation Barbarossa

According to the instructions of the OKW, "Panzergruppe Guderian"

*"Panzergruppe" is the tactical equivalent of a US field army.

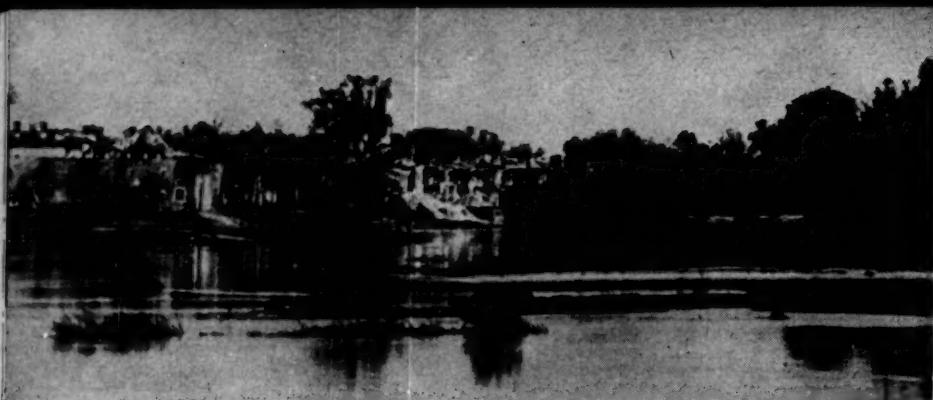
was "to attack with all speed, deep into Russian territory—to prevent the enemy from building new defense lines and, in cooperation with the advancing northern 'Panzergruppe Hoth,' to seize the area of SMOLENSK." That was, to be sure, a far-reaching strategic objective for a Panzergruppe, 700 km (or 440 miles) distant from the operational line of departure. But General Guderian was not satisfied with it. He wanted MOSKVA as his objective instead of SMOLENSK. Often he had remarked, perhaps as a joke: "The objective of the German Panzertroops is always the enemy capital, they must always

be given an objective whose name everyone knows and which has a magnetic attraction. Who has ever heard of SMOLENSK? Everyone has heard of MOSKVA." That is about the same thing that General Patton did in Normandy after the St. Lo breakthrough: he assigned Paris as the objective for his tanks.

Guderian's Panzergruppe had (in his five Panzer and three Motorized Divisions) a total of about 800 tanks of medium and heavy type, 250 AT guns and 360 artillery pieces, of which 110 were heavy.

Difficult Problems

Situated in the center of Guder-



The fortress Brest—formidable tank-proof obstacle



An inner bastion of the citadel



The infantry was assigned the byways and open terrain



Combat importance dictated priorities



Pripet Marshes—no roads

ian's zone of advance, the fortress BREST caused the first difficulties. Surrounded by trenches and stream beds, it was tank proof. Its defenses covered by fire all surrounding approaches and stream crossings. In the Polish Campaign of 1939, the fortress had been taken by us once already. That time it was easier; while the pincer movement west of WARSAW was closing, Guderian led a sweeping strategic attack on BREST from the northern flank. The city was taken with the wave of a hand. The citadel offered obstinate resistance. Tanks could not be used. After three days it was stormed by infantry. We then turned it over to the Russians, who at the time, presumably, were our friends. Now, hardly two years afterwards, we had to recapture it again.

Since it was not a proper objective for Panzertroops, again it had to be turned over to the infantry.

Infantry—or Panzerdivisions?

For the first attack across the Bug River the Chief of the General Staff and most of the commanders of the infantry requested the assignment of infantry divisions. They were to win the bridgeheads out of which the fresh Panzerdivisions could strike deep into the enemy territory unhampered. On the other hand, General Guderian wished that the Panzerdivisions be engaged even in the first attack across the Bug, in spite of this difficult river obstacle.

After the experiences in the French campaign, Guderian was convinced that the early success could only be exploited through the "full speed" advance of the tanks. (At that time, the infantry had also attacked first across the Aisne River. All the avenues of attack were clogged with infantry, vehicles and trains, so that the movements of the Panzertroops were greatly hindered, and therefore, they were too late for the lightning exploitation of the original success.) Consequently, the Panzerdivisions were employed for the initial attack across the 110-180 yard wide Bug. Amphibious tanks, which were originally slated for operation "Sealion" against England in 1940, were to be employed. This was the first and only time on the European battlefields that this occurred.

German amphibious tanks, unlike your landing vehicles, did not travel

on the surface of the water. The amphibious tanks which crossed the Bug traversed it on the bottom.

Approaches

In the zone of the Panzergroup there were only two good roads from BREST: to BOBRUISK; and to MINSK. All the 27,000 vehicles of the Panzergroup and more than 60,000 following infantry, staff and communication troops were to use them. All vehicles were assigned priority numbers, which represented their importance in combat. Differences of opinion developed over priorities. For example, the Air Signal Regiment of Reichsmarschall Goering was only given a third priority, since all it had to do was to lay and secure telephone lines. The commander protested against this assignment. "Can you shoot with your telephone poles?" demanded Guderian. "No." "Then you will keep your third priority," roared Guderian. The commander later shot himself. He could not possibly report to the Reichsmarschall that he was too weak to make his will prevail. Neither were the infantry assigned highways. They had to advance over open terrain and country roads between the main highways.

Russian Terrain

The jungle-like Pripet Marshes on the south flank were typical. These lacked hard surface roads and offered welcomed hiding places for snipers and partisans. The only cavalry division of the Wehrmacht was to comb this area. On this front, countless rivers and streams (which for the most part were swampy) ran across the line of march: Bug, Lesna, Mukhavets, Scczara, Svisloch, Beresina and Dnepr. If the bridges were destroyed by the Russians, then there would be a most unpleasant delay for the so necessarily rapid advance, and the rapid course of the operation would be put in question. It became necessary to try to take the bridges by surprise, undamaged.

The Enemy

Through intensive observation from the countless watchtowers along the border, it could be determined that throughout the front the enemy was weak and that he did not have any idea of our true intentions to attack. One day before the jump-



Countless swampy rivers crossed the line of march

off, from the observation tower at TERESPOL, we could observe the inner-part of the citadel of BREST as the Soviet infantry practiced parade with a military band. The fortifications at the river bank were not occupied. However, in our northern flank in the area of BIALYSTOCK strong Soviet formations were assembled. Guderian was fearful that during the encirclement these troops would try a breakout to the east through both Panzergroups and attack his group. The infantry following was to eliminate this danger. Often Guderian had said to his commanders who were worried about their flanks: "We Panzertroops are in a fortunate position always to have open flanks. The security of the flanks is the responsibility of the

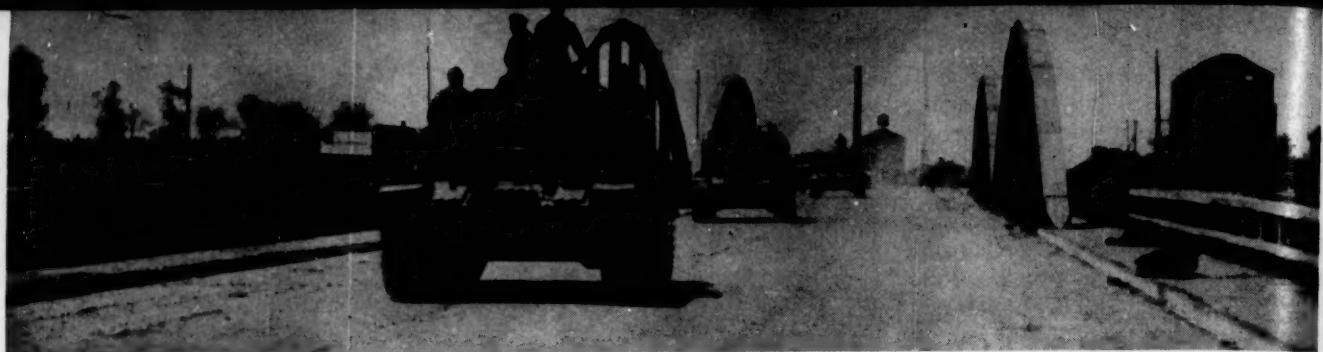
trailing infantry. Panzertroops, therefore, don't have to worry about them." In France this attitude was justified, however, in Russia this problem was much more difficult.

The Storm Breaks

On the 22 June, 1941 at 0300, a dead stillness covered the entire border. Only Soviet supply trains laden with grain and oil for their German "friends" rolled over the Bug bridge at TERESPOL, to the rear of the German front. At 0315 the storm broke and transformed the citadel of BREST into a Hell of explosions, dust and smoke; then the Panzergrenadiers crossed the Bug in assault boats; amphibious tanks crossed and bridgeheads were quickly secured. The Soviets were com-

Fuel was ruthlessly expedited to the point of attack





The Beresina was crossed after only five days



On to Smolensk!



The "Indirect Approach" bagged 300,000 Russians



Smolensk: 440 miles and 25 days from the jump-off

pletely surprised and offered hardly any resistance. By sunset, the Panzers had already advanced deep into Russian territory. Five days later, we reached the Beresina River at BOBRUISK. On Guderian's northern flank, as was expected, the situation was critical. The encircled Soviets in the vicinity of BIALYSTOCK sought to break out to the east with strong armored formations and soon were in Guderian's rear. The axes of supply were blocked with tens of thousands of vehicles and endangered by Russian armor. Guderian vigorously pressed the advance, undisturbed. Supplies, especially fuel and lubes, had to be air transported and, through the ruthless clearing of supply routes, were expedited to the points of the attack.

A new pocket was formed. As a result of the pincers movements of both Panzergruppen "Guderian" and "Hoth," over 300,000 Russians with a great strength in armor, weapons and equipment lay encircled. This operation demonstrates the strategic coordination of two Panzergruppen operating from two directions (by "indirect approach") against the same objective.

Over the Beresina to the Dnepr

For the first time, over the MINSK-MOSKVA highway, the Russians brought their new T-34 tanks into the battle—a great surprise to us.

At the beginning of July, Guderian had to decide if he would continue his rapid advance alone with his Panzers in order to quickly reach the operational objective of SMOLENSK, or if he should wait for the slower infantry divisions who were still busy mopping up the MINSK pocket.

The consequent attack across the Dnepr was favored by the momentary weakness of the Russian river defenses between the fortresses ORSHA, MOGILEV and ROGACHEV.

However, Russian reinforcements were enroute to the Dnepr and already a strong Soviet force was at GOMEL and to the south at VITEBSK. Supporting infantry divisions would have required at least 14 days to catch up. By that time the Russian defense would have been so strong that a more rapid breakthrough would have been questionable. More questionable yet, was the attainment of the operational objective MOSKVA before the beginning of winter. Guderian vehemently defended his plan of immediate further advances against those of his superiors and the infantry commanders who all wanted to wait. General von Kluge finally said to him: "Your Panzer operations always hang by a silk thread." However, on 11 July Guderian had already crossed the Dnepr at KOPYS and SHKLOV. The desperate counter-attacks by Marshal Timoshenko against Guderian's southern flank could, with hard fighting, finally be successfully warded off, and on 16 July, Guderian was in SMOLENSK, 25 days after the beginning of the attack on the Soviet Union. The first operational objective had been reached.

Moskva or Kiev

Guderian pressed for the immediate continuation of the attack on MOSKVA. Hitler hesitated to give him this assignment so soon. He wanted first to fight another battle of annihilation in the south around KIEV. For this he needed Guderian's Panzers. "The far reaching operations, which the General Staff desires, no longer have a place here in Russia. We must defeat the Russians in small battles of encirclement," said Hitler. MOSKVA, the road and rail center, the heart of the Soviet Union, now so accessible, was not to be attacked. Guderian's Panzer had to go to KIEV, some 500 km to the rear! This was a fatal decision, even if the battle of KIEV had been victoriously concluded. The opportunity to take MOSKVA before the arrival of winter, with its preceding muddy period of pre-winter, was passed and with it all the grand strategic plans were sacrificed.

At the gates of Moskva

Already, before the conclusion of the battle of KIEV, about the middle of September, basically eight weeks



Ahead of the infantry by 14 days



Diversion to Kiev—Moskva lost



*The T-34 was a great surprise
(photo actually shows T-34 overrunning German AT position)*



Rolling down the Minsk-Moskva super highway

too late, Hitler gave the order to ready the troops for the attack on MOSKVA. The operation was named "Typhoon." It was supposed to sweep away the last resistance. On the 2d of October, the attack began. During the first days, good weather favored movement. Even the already flat rays of the sun, as it sank low in the horizon over the vast plains, misled us. Behind this, the ominous black darkness followed, omen of lurking storms, which were to usher in the clouds of snow of the winter

October, after a fast thawing snow in the vicinity of MOSKVA, the muddy period of the Russian pre-winter set in. The re-supply of fuel became sporadic. We were 1,500 km deep into Russian territory; the crisis in transportation took on catastrophic proportions.

The taskgroup, whose experiences are described, was engaged in the center sector of the Eastern Front before MOSKVA and had a strength of about 20-25 medium and heavy tanks, a *Panzerjaegerkompanie* (AT

tions and the lack of spare parts. (Hitler used all the spare parts for the production of new tank types.)

After unceasing rainfall (as the communiques always began), the ground became soggy and afterwards intermittently, lightly frozen. According to the map, good roads should have been available. This turned out to be an illusion. The RUZA-VORONZOVO highway went over a bad forest road and was only usable in the beginning. All of a sudden, it began to thaw and rain.



Speedy advance of the Panzers . . .



. . . was soon slowed by the mud of pre-winter



Corduroy roads helped some, but with rain . . .



. . . wheeled vehicle movement was impossible

from the East.

In the vicinity of VYASMA-BRYANSK, again the iron pincers of Panzer group "Hoeppner" and "Hoth" closed around the mass of the defenders in the approaches to MOSKVA. (See map.) A new tremendous battle of encirclement was pending. In most vicious fighting on the historic battlefield of Napoleon before BORODINO, the great defenses of MOSKVA west of MOZHAISK-KALUGA were penetrated. The first Siberian troops were identified here. Also, the second defensive position on the Nara River was seized. By the end of

company) with twelve 35 mm guns, one light artillery battery with four 105 mm guns and two Panzergrenadier companies.

By the beginning of November 1941, it had reached an extensively wooded area east of RUZA, north of the SMOLENSK-MOSKVA super-highway. The number of the German tanks in the division was tremendously depleted as a result of the foregone, five months' uninterrupted heavy fighting and technical failures. Those few tanks still at our disposal, were greatly handicapped in their capabilities by the bad road condi-

The tanks could only labor forward, step by step, in the sticky morass. The movement of wheeled vehicles was impossible. The attack, however, had to be pressed forward under all circumstances. After only about 10 km, near PANOV, the tanks also got stuck.

The muddy period can descend overwhelmingly in pre-winter. But also, in the summer, heavy rains and thunderstorms could produce the same conditions which are exactly similar to those of the muddy period of pre-winter.

Defense

In order to be able to support the advancing Panzers in this period, the Pioneers had to build a corduroy road of saplings over a 15 km stretch from VORONZOVO—PANOVO. However, even on this, because of its unevenness, travel was possible only for full or halftrack vehicles. After several days, the task group was reinforced by infantry and the village of MODENOVO was prepared for defense. The Russians began im-



Tanks could only labor forward

operated while the engine is idling, otherwise by a sudden start, the metal parts of the power train from the engine to the drive sprockets would be damaged.

For the tank crews it was the beginning of a bad time. The constant confinement to the inside of the tank was not possible without a reduction of the combat efficiency of the soldiers, inasmuch as it was narrow and cold. Earthern bunkers, which doubtlessly would have been best against the heavy artillery and MG fire could not be constructed in the ever soggy and muddy ground. The wooden houses which were available for billets, were in the course of time systematically, one after another, destroyed by enemy fire and burned to the ground.

The Russians especially like to employ their rocket weapons, named by the German troops "Stalin organs," which caused heavy casualties. They also attacked with single aircraft of any type—even under the most unfavorable weather conditions.

After a few days, the Russians had full knowledge of the emplacement

of our entire defenses. In order to learn this, they employed the entire civilian population: women, children and cripples, who at first did not seem at all suspicious to the German soldiers. It was only accidentally that these circumstances were discovered.

The supply difficulties took on formerly unheard of proportions. Through the constant warming of the engines, there was a higher rate of gasoline consumption. Constant defensive combat caused a higher rate of ammunition expenditure. For days on end, there were no hot meals for the combat troops—intestinal diseases and disorders were the result.

Advance

By the middle of November, the frost had set in on all sectors of the Front and the muddy period came to an end. The frost made it possible to resume the offensive till the winter, with icy cold and heavy snow, began. The final struggle over the second great MOSKVA defense line between ISTRA-ZVENIGOROD, NAROF-MINSK began.

Soviet tank trap before Moskva

mediately to undertake ever increasing day and night attacks. It was necessary that the task group be constantly on alert defensively. In order to do this, it was necessary to maintain the tank engines at the required temperature. Every four hours, the motors were run 10-15 minutes until they reached the temperature of 140° F. These periods commenced for all tanks exactly at the same second in order to insure the effectiveness and security of the forward listening posts in the dense fog and during the night. It was learned that the transmissions must also be

Flat rays of the sun—prophetic omen of storms from the East



Our taskforce resumed the advance around the 20th of November. The Russians withdrew, fighting with clever tenacity, in the direction of ZVENIGOROD. West of the line ZVENIGOROD-ISTRA, one obstacle followed another. Extensive minefields, icy slopes produced by pouring water on them, barbed wire entanglements, earth and snow ramparts, angular and lateral antitank ditches, those were the customary Soviet-type obstacles. For the German Panzers, unaccustomed to winter, severe difficulties arose. As a result of continuous employment since June, the tracks had been so worn down, some of the track pins were even bent round. Track snow grousers were of insufficient supply. Consequently the tanks skidded and steering was almost impossible. The few available non-skid grousers were mounted with steel spikes. These easily sheared off and after a few days almost all of them had been lost. In order to fasten them, very heavy steel bolts would've been required.

Some of the well developed Russian positions west of PAVLOVSKAYA SLOBODA were not occupied. Behind them, however, the Russians often had built well camouflaged anti-tank gun emplacements. They permitted the German tanks to approach to closest range. Then they opened fire from all sides simultaneously. This unexpected fire caused

many losses. Especially bad were the bright clear sunny days. Fog and foul weather reduced the efficiency of the enemy tank and antitank gunners considerably. These experiences forced us, as often as possible, to mount limited attacks at night. Otherwise we had to hold up for the night in villages because of the cold which gradually dropped to -58° F. If one of these villages had been taken, it would immediately become necessary to secure it and prepare its defense. The Russian counter-attacks invariably followed at that moment in which a definite weakness was known to exist for the attacker—after he had reached his objective and his defense was not yet organized.

Nightly concentrations of incoming fire on these villages, which were occupied by the Germans, with rockets and lone bombers was the rule. The few houses available were overcrowded with troops who, consequently, suffered heavy casualties.

Despite the fact that the ground was now frozen solid, wheeled and half-tracked vehicles could only follow the advance with difficulty. The deep ruts which had developed on the roads during the muddy period were now frozen and caused excessive strain on the springs, axles and wheels of the vehicles. Breakdowns of these parts were, therefore, tremendous. Especially treacherous

were the wooden bridges which crossed the countless streams in this sector. Under the coating of ice, they were often damaged by the Soviets or by the pressure of the ice. Bridge reconnaissance missions to determine capacity and condition were long and difficult. Often the bridges collapsed under the weight of the tanks, which, of course, broke through the ice of the streams and the crews could not be saved. Whenever possible, fords were used. When crossing a bridge only the driver remained in the tank.

During the light snowfall and in the changing landscapes, the camouflage of the tanks had to be changed almost every day. Every tank had a bucket of chalk or lime aboard so, according to the necessity, white, grey or darker color could be evenly painted on or in irregular zebra fashion.

During night attacks, frequently illumination ammunition had to be employed. The Russian wooden houses with their straw roofs ignited very easily. The enemy could, resultantly, be smoked out. However, the disadvantage of this was that after the seizure of the village there was no more shelter for the troops.

Tanks and the Cold

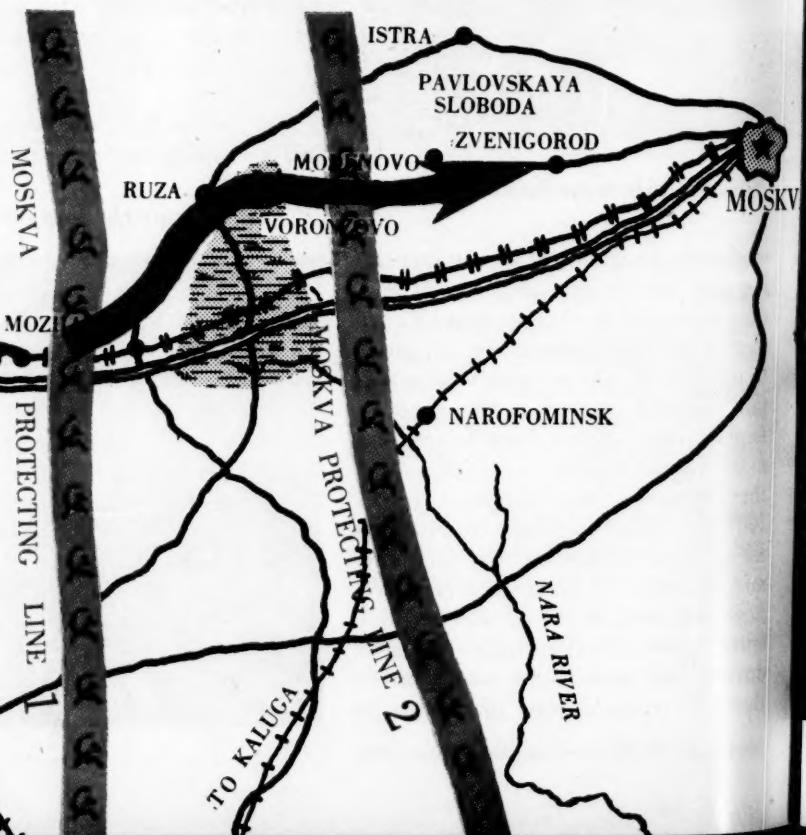
In several German tank types, the air for the engine was sucked in from the outside through the fight-

AT THE GATES OF MOSKVA Combat team in advance

PANZER GROUP
HOTH

GZHATSK
SUPERHIGHWAY
VYAZMA-BRYANSK

PANZER GROUP
HOEPPNER
YUKHNOV



ing compartment. This ice-cold air-draft had an adverse effect on the health of the crew. In order to reduce the cooling in the engine, cardboard and wooden plates were secured over these intake ducts. The glass on the optical instruments and on the vision blocks became frosted and covered with ice. In order to prevent this, they had to be rubbed down with salt several times daily. If a tank stood still for any length of time it had to be pre-heated before starting. Since there was no special equipment available for this, wood fires had to be lit under the engine and under the transmission of the tank. Later on, we received heating equipment for watercooled engines which, unfortunately, did not prove successful. By employing these open fires under the tanks, a tank company could be ready for action in about two to four hours. The complicated water heating system required considerably more time. At airfields in Russia, hot air heating devices were used to warm the aircraft engines. These rendered very good service. A small gasoline engine drove a propeller which forced the air over a large gasoline heater and conducted the hot air through the tubes to the engine.

The wintergrade oil used for the engines in the German Wehrmacht was still too viscous for the degree of cold of the Russian winters. It

Bridges had their limitations



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Bridge reconnaissance missions were long and dangerous



Freezing lubricants were a problem in the extreme cold

became necessary to thin it with kerosene. Likewise, lubricating oils for weapons had to be very thin. On the cannons, however, the damage through the use of heavy oil was negligible, but the machine guns had continual stoppages because of their more delicate mechanisms.

The storage batteries in the tanks were too weak for Russian winter warfare. They frequently had to be exchanged for recharging for which an equivalent supply was necessary. The change of batteries was very time consuming since they were located in a very inaccessible place and were difficult to reach. The strain on the batteries was especially great during the long period of starting. The constant radio watches during the most fluid situations, caused by the unpredictability of Russian methods of combat, drew heavily on the strength of the batteries. In German tanks, a centrifugal starter was built in. However, it soon showed itself to be of in-

sufficiently rugged construction for constant use. The teeth of the intermeshing gears and cogs soon wore off. For Russian winter warfare an especially powerful centrifugal starter, made of the finest material, would have been a necessity.

Tank Crewmen and the Russian Cold

It was in front of MOSKVA that the catastrophe eventually occurred. The bitter cold penetrated everything, the thermometer sank to -67° F., snowstorms followed. The troops were still fighting in the uniforms of the summer campaign. Countless cases of freezing-to-death occurred. In many cases, the troops slaughtered their horses in order to provide their own food. The tank crews tried to warm the inside of the tanks with charcoal fires. Through ignorance and carelessness, carbon monoxide poisoning resulted. Other than that, so much condensation formed that with the rapid cooling off from the outside, the optical



Awake and moving—key to survival



Russian winter—bitter cold and lonely

White side out!



Frozen engines and motor oils made . . .

instruments and the weapons became covered with ice. In order to avoid freezing to death, the tank crews tried to remedy the situation with all expedients possible and became quite resourceful. The decks of the tanks were laid with straw mats, they stuck their feet into sacks filled with hay. To protect their faces, cloth and fur masks were requisitioned. Crumpled newspaper proved itself to be a superior antidote for the cold with which almost all the body garments were insulated. In spite of all these efforts, cases of freezing were frequent among the tank crews. During an assignment as security outpost, which often lasted for days and nights, one dare not sit still in the tanks, but must keep constantly moving. The reliefs in the tanks were so organized that two men stood watch and, after about 30 minutes wakened the other crewmen; they then performed calisthenics to warm themselves. Only in this manner could they prevent their hands and feet from freezing. Electrically heated combat suits were experimented with. The supply of the electric current in the tank batteries was far too weak. The wearing of overcoats was a great burden and is such a great hinderance in the narrow fighting compartment. The only proper clothing for tank crews in such circumstances are furlined combat suits, furlined caps with built-in head sets and felt or fur boots. The continuing cold, the confinement to the ice-cold steel compartments of the tanks or the vermin infested Russian wooden shacks, freezing and sickness tore slowly, but surely,

against the moral resistance and will-power of the soldiers. With that came the loneliness and eternal monotony of the terrain covered with deep snow. The troop leaders found it necessary to apply increased pressure, and often force, in order to bring the men to rid themselves of vermin and carry out the most primitive hygienic requirements. In spite of all chemical detergents against them, it was necessary, even in the worst cold, to search through clothing for lice. Further, the soldiers had a tendency to overheat their small accommodations. Then, if they suddenly went outside in the cold they became very sick. Otherwise, the dry winter climate is very healthy and sickness from colds and the like occurs remarkably seldom. For a few weeks the taskgroup suffered severely from "Wolhynischen (trench) fever" carried by the lice, for which there was no medical cure. Cases of spotted typhus, however, did not occur.

Coordination of Arms

By the middle of December, all sectors of the front had completed their changeover to the defensive. In some instances, the troops withdrew locally. In order to secure a constant state of defense, the tank units, who were the backbone of the defense, were forced to maintain closest contact with all the other arms. The artillery always had to be in position to fire defensive barrages on request. The infantry requested the tanks, in most cases, that they should be a part of their most forward positions. This request was often the subject of intense differ-



Snow provided protection from splinters

ences of opinion. The assignment of the tanks to the most forward defense line meant, of course, the absence of any mobility or strong reserve for counterattack against a sudden enemy penetration. Additionally, the tanks, when they were not dug in, or because of their size and lack of facility to be camouflaged, only served too easily to disclose the position. In any case, the assignment of tanks to the most forward line as armored anti-tank guns or armored machine guns had no other reason than for morale effect on the infantry. The desperate request of the infantry for tanks was easily understood. They had to withstand the most severe hardships of the winter campaign in its cruellest form, were very tired and placed all their hopes on the thick armored plates and the large cannon of the tanks. In the course of this winter campaign, the consequences of the lack of training in peacetime for the coordination between tanks and infantry (which had been inconsequential or not at all) became tragically apparent.

... maintenance a Herculean task at 50 below



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Retreat

During the second half of December, the counterattacks of the Russians, reinforced by fresh Siberian troops, equipped in the best winter clothing and accustomed to the cold, became ever stronger. Along the entire front before MOSKVA the troops had to withdraw locally. All higher commanders requested of the OKW that their lines be withdrawn to "winter positions" which actually did not exist. Hitler stood up against this with all the demoniacal will-power which seized him in such moments. He forbade any movement backwards whatsoever.

Our Panzertaskgroup moved from the area of ZVENIGOROD about the 20th of December, among alternating engagements and by the utilization of rapidly improvised defense positions, to the southwest in the direction of MOZHAISK. The emplacement of the tanks in the defense could not be accomplished because of the lack of time and the ground which was frozen rock solid. Digging into the earth would have only

Eternal monotony of snow





Offloading flatcars at Borodino

been possible with large demolitions. However, to achieve a positive overhead cover and camouflage, the tanks were piled up with snow, lumber, straw and hay. Even if these walls did not withstand much, at least they minimized the effects of bomb and shell fragments.

Reorganization

Shortly after Christmas our task force was pulled out of the line for a short time to the area southwest of MOZHAISK for reorganization and maintenance of equipment. The tanks, however, had to remain combat ready at all times in the event they had to be used in a crisis at the front. For this purpose, a large Kolkhoz barn was outfitted in KUPROVO. Long stoves were built out of empty fuel drums and the tanks were insulated with straw. Batteries and radio equipment were brought into well-heated rooms. To rebuild the combat power of the Panzertask-force, new tanks were received on flatcars at the railroad station of

BORODINO. The on and off loading of the flat cars was exceedingly difficult in the Russian winter. Almost always the loading platforms were coated with ice. They had to be carefully cleaned off and strewn with ashes or sand. During the unloading, the tanks had to be towed down by a tank retriever or a half-track. By means of open fires under the transmissions and engines the tanks were warmed for the first time. Track and suspension systems had to be carefully cleaned of ice. Great care had to be exercised in starting the engine with the least possible stress to the equipment which had become brittle.

Roads and Re-supply in the Russian Winter

In January, 1942 snowfall became heavier and the depth of the snow reached a height of over six feet. For supply and other movements, roads had to be shoveled free. At the same time, snow fences were built on both sides of these roads. The frequent



1,500 frozen km from base of supply

snowstorms, without these precautions, could have covered a week's work in a few minutes. The snow fences were constructed out of boughs and boards. When there were enough trees, the building of the fences could be sped up by laying interlocked tree-tops behind each other. In the beginning we made the mistake of building the snow fences in the immediate vicinity of the cleared roads. Experience soon taught us that snow fences should be erected at least 15 yards distant from the object to be protected. Because of the lack of experience, our troops often hit the deepest snow. The Russians, because of their natural environment, almost instinctively sensed with certainty positions on which the depth of the snow was negligible, such as heights, windprotected slopes or rolling ground. It took a long time for our troops to get used to these conditions and peculiarities and properly cope with them.

The Russians built winter roads

"Panje" horse—capable of great accomplishments



Traffic control—a nightmare of difficulties





We learned from experience . . .



. . . local animals and implements were best

even in peacetime according to the reports of prisoners. Often, these never completely corresponded to roads designated on the map. Even with the most powerful vehicles, the maintenance of supply and communications would have hardly been possible without the employment of horses and sleds. The so-called Russian peasant "panje" horses accomplished the almost impossible under these most difficult conditions, such as snowstorms, fog and darkness. Even we armored troops had to depend to a great degree on supply by horses. The peasant sled served the best purpose for this. Attempted German constructions of larger and sturdier sleds proved to be almost useless because they were heavy and clumsy. Fortunately, the Russian peasant horse did not require much upkeep. For example, fed for weeks on end only with straw, part of which was taken from house roofs, he could still produce great accomplishment. These horses have in addition to this a highly developed

sense of direction.

At the end of January, after more extensive withdrawals, the task force marched to another battle zone northeast of YUKHNOV. During this time we recognized everywhere that we were no match for the difficulties of travel in the winter. The cleared roads were clogged by frequent oncoming traffic and the prepared bypasses were in no way sufficient. For motor vehicles, horse drawn vehicles and sleds moving in opposite directions there was only one lane available. In every village vehicles and personnel crowded together. The traffic control measures were insufficient and their enforcement personnel (MPs) understrength. At difficult spots in the road, for example iced slopes, bridges and small passages, constant road repair and traffic control personnel were missing. In comparison, the Russian system was ideal. In the winter time, separate roads for motor and horse-drawn traffic were used and only authorized for traffic in one direc-

tion. Our re-supply arteries always had to be protected by patrols because Russian reconnaissance parties and partisans on skis disturbed the traffic by sniping and attempted to lay mines that were effective against horse-drawn traffic as well as the infantry. Considerable casualties were suffered because of this.

After having reached our new position, the installation of supply points was the next major worry for the task group. One never knew if he would be cut off by adverse weather conditions or a surprise enemy attack from the hinterland. By reason of experience, the task group made it a custom, on the front or behind the front, as soon as they had reached a village, to organize it defensively with all possible means and to protect the movement of supplies. Different supply points were designated for fuel and ammunition.

The tanks were serviced by mobile maintenance units, which with light half tracked vehicles, sleds and on skis, came to the tanks and repaired

Bridges — a permanent headache

On sleds and skis they came to the Panzers



them at their location. The evacuation and recovery of tanks was impossible during the muddy period and in the winter with deep snow. Also, as it began to thaw, the snow clogged the end connectors and pinions, causing an unmistakable explosive effect.

Local Billeting

Components of various units were jammed together in the few available villages. In the interests of a well-organized local defense, troops of all units were placed under the command of only one local commandant. Liaison officers of all the units were always with him. This was, therefore, of greatest importance because the Russians, especially in the hinterland, could at any moment when it was least expected, attack with partisans and paratroops. Every night there was constant traffic in the air overhead by which the Russians continually reinforced and resupplied their commando troops. They even went so far, according to many confirmed reports, to jump troop units out into the snow without parachutes from low flying aircraft. Their drop zones and landing strips, whose positions were changed frequently, were marked at night by burning gasoline cans. Occasionally, we succeeded in capturing orders which confirmed this and were able to disrupt the Russian partisan resupply. The Russians, however, reacted very quickly and answered promptly with a bombing raid on these positions.

As "Firebrigade" in the Vicinity of Yukhnov

In the overall picture, the whole Eastern Front held, despite the heavy Russian attacks and occasional dangerous breakthroughs by the enemy—for example, a penetration splitting the boundary of Army Group North and Army Group Center in the vicinity—DEMYANSK-OST-SHAKOV-CHOLM. In such cases Hitler ordered the defense of more important points in "hedgehog" fashion.

Since few tanks were available on the whole front, and they were being used everywhere to support the infantry, our task force also had to be broken up into smaller groups, which were sent to the various positions of the most forward line as defense; for local counterattacks; as a



Villages became centers of survival



Antipartisan patrols—a constant necessity

mobile reserve; or as convoys for the supply columns. The leader of our task group chose a centrally located command post from which he could reach all the possible hot spots that might develop. Naturally, communications had to be rapid and constantly guaranteed. Besides the extensive telephone nets of the infantry, the tanks checked their radio nets every two hours; in critical situations constantly. The latter, of course, was very hard on the batteries of the tanks. After a comparatively short time, the tanks had established an extensive communication and observation net among themselves in coordination with the other units, especially with the artillery. This was particularly necessary because the infantry, in their efforts to get tanks to help them, often pictured the situation more critical than actually was the case. While this was understandable, because of the shortage of tanks all requests could not be fulfilled.

In addition to this, the maximum

effort was demanded from the tank crews. In the course of the winter they had stood many days and nights without any possible means of warming themselves to be ready for defense. In many cases, it meant certain death to dismount from the tanks in daylight. Well-camouflaged Russian snipers often crawled silently through the snow and worked themselves up to the minimum range and picked off our men. A particular problem during such times was the elimination of human waste. For this reason, again and again, it was requested that hatches be built into the hull deck in order to permit dismounting underneath. If it were possible to ascertain that the tanks had to stay at the same place for a longer time, then deep holes were dug underneath the tanks and lined with straw. This temporarily gave a protected refuge for the crew. Two men, however, had to stay in the tank at all times. During the advance or attack of the enemy, the lack of an escape hatch



The very presence of armor in the line gave comfort to the over-extended, lonely infantry

was a great drawback because it was only possible to get into the fighting compartment from the outside and through enemy fire.

To mop up an area in which the enemy had penetrated the line of infantry, it was necessary to make a local counterattack in coordination with the infantry. This was especially difficult because in the deep snow it was only possible to drive down the road with one tank behind the other in column. In daylight such a counterattack was often held up by a single anti-tank gun. Consequently, night attacks became the routine. Together with the infantry, the tanks advanced slowly by bounds. The infantry, for the most part, rode on the tanks. Machine guns were used and the flat stretches were covered with grazing fire. These counterattacks were, in almost every case, successful with a minimum number of casualties. The greatest caution was necessary when the light

of burning houses, or similar objects, illuminated the tanks. Sometimes it even became necessary to hold up the attack until the fire died down. Occasionally it was necessary to employ "snowshovel commandos" in the attack, in order to dig a passageway for the tanks through the deep snow, in the same way in which Pioneers cleared mines on a battlefield. These commandos worked under the protective fire of the tanks.

The Russian Soldier and the Winter of 1941-1942

During the winter of 1941-42 the Russians persisted in attacking their objectives again and again with unbelievable stubbornness against the same point in spite of all their casualties. In front of some positions, during the defense against a Russian attack, there literally developed mounds of corpses. Against their primary objective they attempted almost daily to make a breakthrough

at exactly the same time. Our defense employing the tanks benefited us very much. Because of the deep snow, the assembly points of the enemy had to be close to the objective — otherwise the incomparable exertion of moving forward in meter-deep snow was also physically impossible for the Russians. Every time before the beginning of a Russian attack, our tanks advanced and overran their assembly area. This was repeated on many occasions and at many locations. Combat between German and Russian tanks was at that time very unequal. The T-34 equipped with a high velocity 76.2 mm gun (long tube) was far superior in range to the German tanks with their 50 and 75 mm short tube cannon. Therefore, we could only engage in tank duels at close range. As a remedy, at medium and far ranges our tank group experimented with, and employed, firing by salvos. The target,

German AT and tank guns . . .



. . . no match for early Russian monsters



exact range and the command to fire were all issued over the tank radios. The concentration of several tank rounds at one point, almost at the same time, did the most damage to the enemy tanks.

The Russians were always very tenacious. Even if they were encircled and completely without re-supply, they defended themselves to the last. Often all they had for nourishment was treebark and the remainders of horse cadavers. The repeated requests to surrender by leaflets and loudspeakers went without success and they very seldom surrendered. In some instances, they tried to act as if they were dead in order to deceive us, or sometimes they represented themselves as columns of prisoners and then suddenly tried to break through and attack our troops.

In this winter battle before MOSKVA, in spite of the most adverse conditions, our taskgroup had completely fulfilled its difficult mission. With the beginning of the thaw and mud period in the spring of 1942, the Russian attacks diminished and suddenly ceased completely. The terrible winter crisis in Russia, however, proved Hitler right. The tactics, to hold the most important lines of communication and the major transportation centers or supply points as "hedgehogs" defended by all means available, whereby one could choose to voluntarily seize the

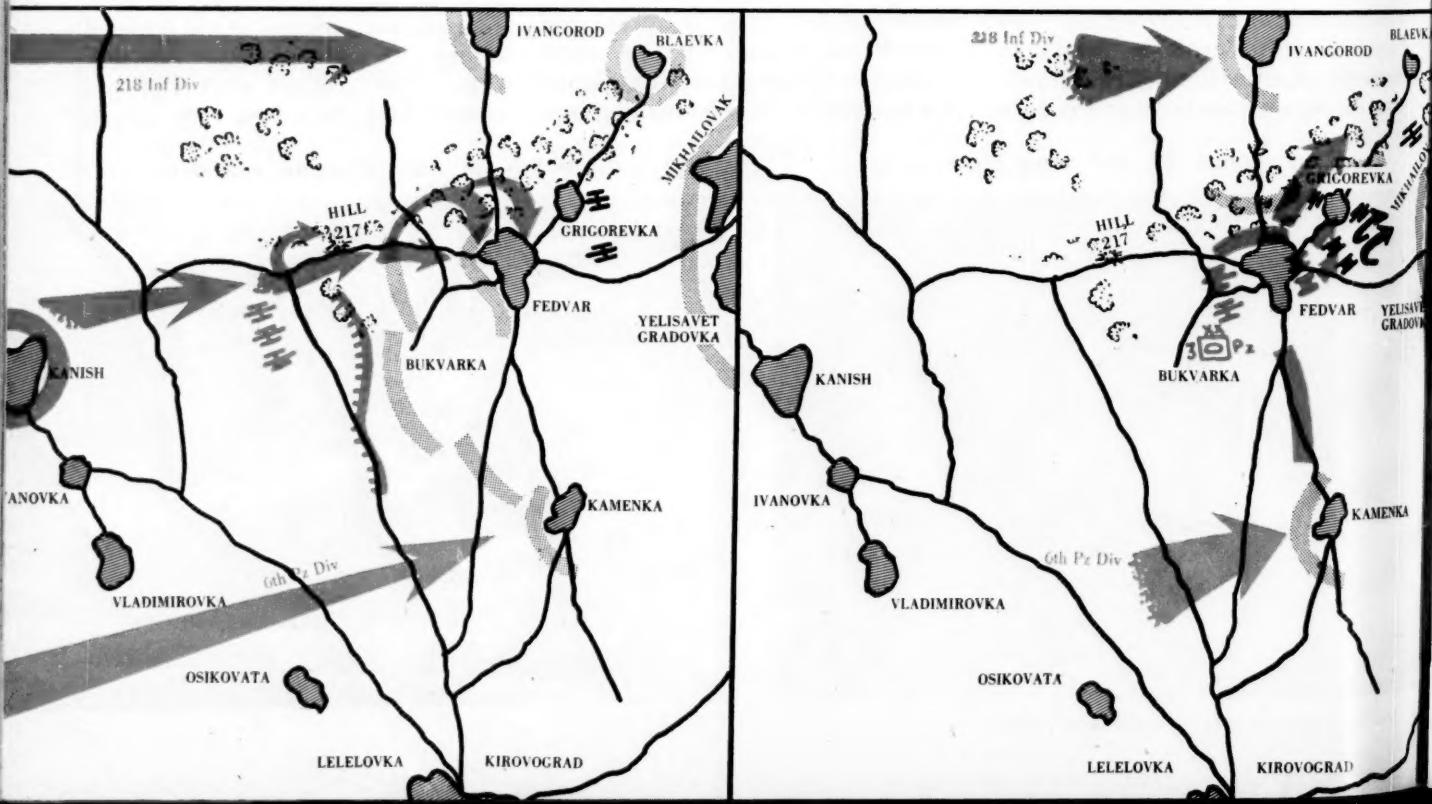
initiative or not, proved itself. In the long run, it meant, however, an unbearable expenditure of troops and of the few materials still available. We could not permit such conditions to repeat themselves.

In addition to this, it happened that the Russian counteroffensives were not yet completely directed against major strategic objectives, in spite of a sufficiency of equipment with winter conditioned troops, tanks and mechanized sled, ski and cavalry units. The terrible defeats of the foregoing summer, naturally, were not without serious consequences. The Soviet troops frequently succeeded in infiltrating the German lines. They also were successful in breaking through at many points. However, a breakthrough in the depth was generally not envisioned. In general, the attackers were stopped in front of the German "hedgehog" positions, thereby strengthening Hitler's thesis.

But the backbone of the German divisions, the Panzer as well as the infantry divisions, was broken during this winter. They never recovered from these setbacks, neither in personnel strength nor morally. They had an inferiority complex and overrated the Russian soldier. I noticed this especially as I returned again to Russia in 1943 from the African Theater and took over the command of the 3rd Panzerdivision.

The Experiences of the 3rd Panzerdivision in the Fall and Winter 1943/44

The 3rd Panzerdivision, one of the three oldest Panzerdivisions of the German Wehrmacht, was an elite division. A long series of victorious campaigns had carried them from BREST to BOBRUISK, in the vicinity of SMOLENSK, then to KIEV, to the gates of MOSKVA and finally into the Caucasus at PYATIGORSK, one of the furthest points ever reached by German troops. During the great withdrawals they fought through the northern Ukraine and crossed the Dnepr in the vicinity of TSCHERKASSY. At the time I took over this division, it was still only a taskgroup. At my disposal I had about 25 tanks, (an entire tank battalion was deployed to Germany for re-equipping), two Panzergrenadier regiments of four understrength battalions—one Pioneer battalion, one reconnaissance unit and three artillery battalions. This taskgroup I led myself, according to the examples which I had learned from Guderian in the East and with Rommel in Africa, i.e., in the most forward lines among my troops. In October, 1943 the task group was assigned to the defense at KANEV and in November, I broke the pocket around TSCHERKASSY. Then in November, when the Russian offensive on KIROVGRAD was expected, I was ordered to penetrate the Soviet de-

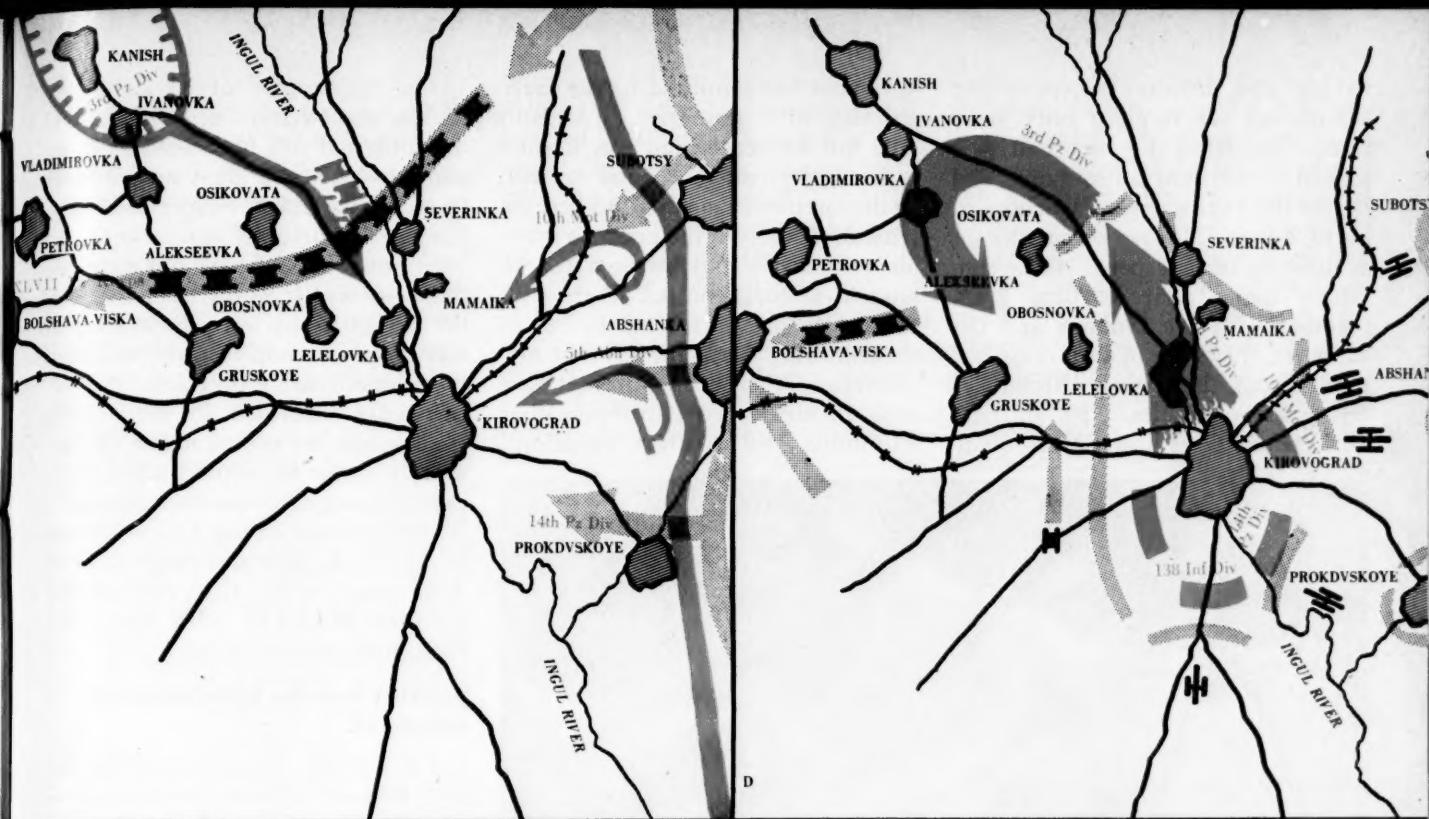


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KAMENKA



fensive positions north of KIROVGRAD along with two other divisions, to disrupt this offensive.

The Tank Attack Against Fedvar

The 3d Panzerdivision had the mission to attack in the sector of FEDVAR. The Soviet positions were near BUKVARKA. The ground was covered with snow and light snowflurries were in the air. The temperature was -13° F., as the taskforce moved out of the vicinity of KANISH in the following order: 25 tanks with attached Pioneers for mine clearance; then followed a company of Panzergrenadiers in half tracks and a detachment of armored artillery. The remainder of the artillery covered the advance of the taskgroup and the Pioneer battalion was to secure the wooded area on the north flank. Woodlands are always dangerous in Russia — the Russian is so at home in this environment.

At the approach of our tanks the Soviet outposts withdrew. A strongpoint at hill 217 was seized by my Pioneers and the exits from the forest area blocked with mines and antitank guns. As my tanks crossed the road leading north from BUKVARKA, they were taken under heavy artillery fire and stopped by AT fire out of FEDVAR. Two of my tanks were hit and went up in flames. The remaining tanks stopped and went into positions in defilade and be-

hind haystacks. Under their protective fire, and that of the artillery, a battalion of infantry commenced the attack into FEDVAR. The enemy defensive fire increased steadily. The well-concealed antitank guns, the dug-in tanks and the artillery were very difficult to locate. My tanks concentrated their fire against known AT nests. Soon FEDVAR was burning in several places and it was possible to neutralize enemy artillery in its battery positions. But it was not possible to break the resistance of the antitank and machine gun nests. The infantry suffered heavy casualties. Therefore, I ordered the frontal attack broken off and ordered a reserve battalion to continue with a flanking attack through the woods around to the north of FEDVAR. At the same time, I attempted to deceive the enemy of my intentions with regard to the frontal attack by continuing with heavy antitank and machine gun fire. Thus, the other battalion advanced through the woods and penetrated into FEDVAR about noon. There, 16 Soviet AT guns and four T-34s fell into our hands and 150 men were taken prisoner.

This battle demonstrated the coordination of tanks and infantry operating from different directions. It also showed that the Russians were masters at camouflaging their weapons. However, their infantry could

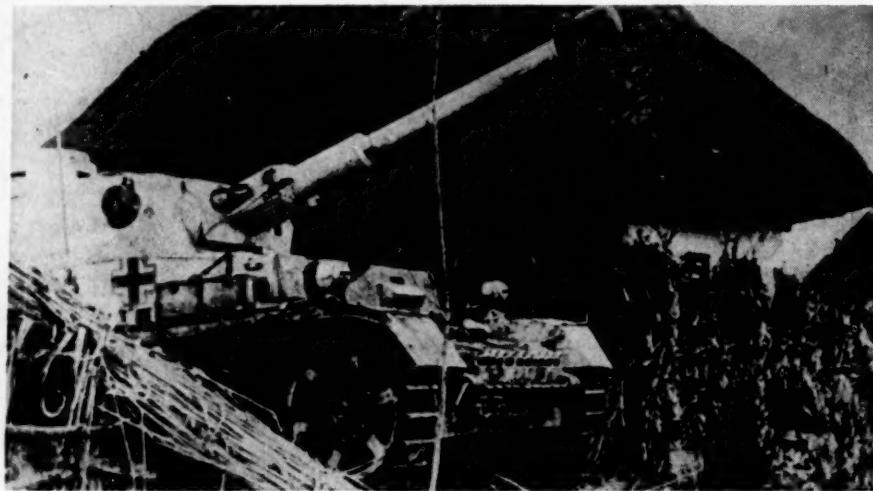
not withstand our attack from the flank and rear.

Night Attack Against Grigorevka

After FEDVAR was seized, I wanted to continue the attack to the east as rapidly and as soon as possible in order to exploit the success. I directed my tanks into the area south of GRIGOREVKA. One by one, 15 to 20 T-34s were located there. The edge of the village of GRIGOREVKA was dotted with antitank guns and machine guns. On the edge of the woods, to the north of the village, we located strongpoints. A tank duel developed between the Soviet tanks and my own, which were in good defiladed positions by this time. Five T-34s were knocked out of action and two more went up in flames. In spite of this, it appeared to me that a further continuation of the frontal attack would be too costly, because of the irreplaceable tank losses and the insufficient supply of ammunition. My tank unit commanders were very skeptical. Therefore I decided to continue the attack at night. In order to deceive the enemy, I pulled some of the tanks out of the front line back to FEDVAR and began the attack shortly after darkness with tanks, pioneers and infantry mounted on the tanks. The pioneers cleared the minefields. The tanks fired only with their machine guns into the enemy sector without

having any definite targets. From GRIGOREVKA we received only weak return fire from the surprised Soviets. A house went up in flames and lit up the entire area. It behooved us to hurry. I drove the tanks on at their maximum speed. While constantly firing their machine guns, together with the infantry and the Pioneers, they pressed into GRIGOREVKA and took the village without suffering any casualties. Five antitank guns, three T-34s and a large quan-

ROVOGRAD was launched in the early morning of 6 January. (See map.) The 3rd Panzerdivision was located as the army reserve around KANISH. In the forenoon the situation became critical. I received the order to move on KIROVGRAD and be prepared to launch a counterattack there. At about eleven o'clock I moved out in the following march order: first motorcyclists, then a Panzerbattalion with 20 tanks, two Panzergrenadier battalions, two artillery battalions.



Mark IV with new gun had an edge

ty of ammunition and motor vehicles fell in our hands. I organized the village for defense and in the same night occupied the adjacent commanding hill mass. The strongpoints at the edge of the woods could not be taken till the next morning.

During this attack we learned the following: If attack by day does not promise success, or threatens to incur too many casualties, it is advisable to attack by dark. A night attack with tanks, which continually fire their light weapons, makes a big psychological impression on the enemy, even the Russians. During the night attack it is very necessary to permit the infantry to ride on the tanks in order to execute a more rapid maneuver. The enemy cannot lay aimed fire and scores hits by chance only. If the zone of action is illuminated, rapid movement and continual fire is necessary in order to prevent the enemy from laying accurate fire and to deceive him of your own strength.

Combat Against Soviet Tanks Which Have Broken Through

The Russian offensive against KI-

ROVOGRAD was launched in the early morning of 6 January. (See map.) The 3rd Panzerdivision was located as the army reserve around KANISH. In the forenoon the situation became critical. I received the order to move on KIROVGRAD and be prepared to launch a counterattack there. At about eleven o'clock I moved out in the following march order: first motorcyclists, then a Panzerbattalion with 20 tanks, two Panzergrenadier battalions, two artillery battalions.

The appearance of Soviet tanks 25 km behind the line, which that morning had still been held by German troops, was a great surprise for us which we did not expect. Therefore, my security measures were insufficient. I should have put a reconnaissance screen on my left flank. As the Soviet tanks were discovered it was proper to stop in order to occupy favorable firing positions. Part of my tanks remained in these positions, while the others advanced further in order to achieve advantageous range against the enemy's flank. The side armor of the T-34 is known to be weak, and the range of the T-34 gun was less than that of the German Mark IV with the new, long, high-velocity tube.

Breakout from the Encirclement of Kirovograd.

On the 7th of January, 1944 the 3rd Panzerdivision conducted a successful counterattack in the direction of SUBOTSY. In order to avoid encirclement by superior Soviet forces, we had to retreat to the northern part of KIROVGRAD. In the morning of 9 January, KIROVGRAD was completely surrounded by the Russians. Soviet tanks had broken through into our rear and during the night of 8/9 January, the CP of the XLVII PzKorps in BOLSHAYA VISKA had been ambushed by Soviet tanks. Most of the staff was killed or wounded. The commanding general had escaped, clad only in his underwear. Telephone and radio communications between division and corps had been broken for 15 hours. According to the last order, KIROVGRAD was to be held under all circumstances.

I decided not to execute this order, which had been given 15 hours earlier, but decided to attempt a breakout in a northwesterly direction with the coming of darkness. I assembled my troop leaders and explained to them as follows: "We are completely surrounded by the Russians. The last instructions, received 15 hours ago, were to hold KIROVGRAD under all circumstances. That is now senseless. KIROVGRAD sounds like STALINGRAD and I do not wish my troops to suffer the fate of the 'Stalingraders.' We will break out tonight and then operate against KIROVGRAD from the outside [of the pocket]. Five taskgroups will be

formed. (See "March Order.") By twilight the taskgroups must be standing ready to move from LELELOVKA. I will be leading taskgroup 'A.' My commanders were overjoyed at this decision. Then I sent a radio dispatch to corps and army which follows: "At darkness on 9 January, 3d Panzerdivision will break out of KIROVOGRAD in a northwesterly direction and operate in the rear of the enemy against the encircled town."

By late afternoon the Russians rec-

both sides of the highway into the vicinity of three or four km northwest of Hill 181. Taskgroup "B" established defenses around Hill 181. Taskgroups "C," "D" and "E" reached the vicinity of VLADIMIROVKA-KANISH. The artillery went into position in VLADIMIROVKA.

The unauthorized activities of the 3d Panzerdivision were later on not only approved of, but highly praised.

By the afternoon of 10 January, a taskgroup of the Division successfully undertook operations against

and my division. I did not fear the Russians, as was the case with the "old Russian Front veterans" who had taken part in the catastrophe of the Russian winter 1941/42 and the retreat of 1943. In the winter of 1941/42 the German divisions suffered losses from which they never really recovered. Therefore the troops had a partial inferiority complex because the Russians were always far superior in manpower, tanks, artillery and supplies. In addition to this, as compared to the

MARCH ORDER

3d Panzerdivision

Group A 25 tanks (MIII, MIV)
1 Co Armd Inf

Commanding General

1 Co Pioneers
1 Bn SP Arty
PzGrd Regt 3
1 Bn SP Arty

Flank 1 AT Co



Russian military character: inflexible, tough, uncomplaining

Group B Damaged vehicles
Group C Supply vehicles
Group D PzGrd Regt 391
1 Bn Arty
Group E Pz Recon Bn
(as rear guard)

ognized our readiness to move in LELELOVKA and concentrated heavy artillery fire on the village.

At exactly 1730 hours, my tanks began to move over the snowcovered terrain. Temperature of -40° F. prevailed. The sky was cloudy with no moon. The tanks moved out in wedge formation. After about a three km march we saw the muzzle flashes of Soviet tank or antitank cannon. One of my tanks was hit and afire. It lit up the entire zone of attack. Soviet tank fire was ever increasing. Soon we recognized the Soviet positions. My tanks went over to the attack accompanied by Pioneers and armored infantry. The artillery covered their advance and then themselves advanced by bounds. It was almost completely dark when my tanks broke into the Russian positions, capturing ten AT guns and about 20 prisoners. The bulk of the defenders had vanished. We lost only the one tank, the crew of which could not evacuate its burning vehicle.

Taskgroup "A" then advanced on

strongpoints in ALEKSEEVKA and OBOSNOVKA. This pressure against KIROVOGRAD enabled our encircled divisions to conduct a limited counterattack and finally completely extricate themselves from the encirclement.

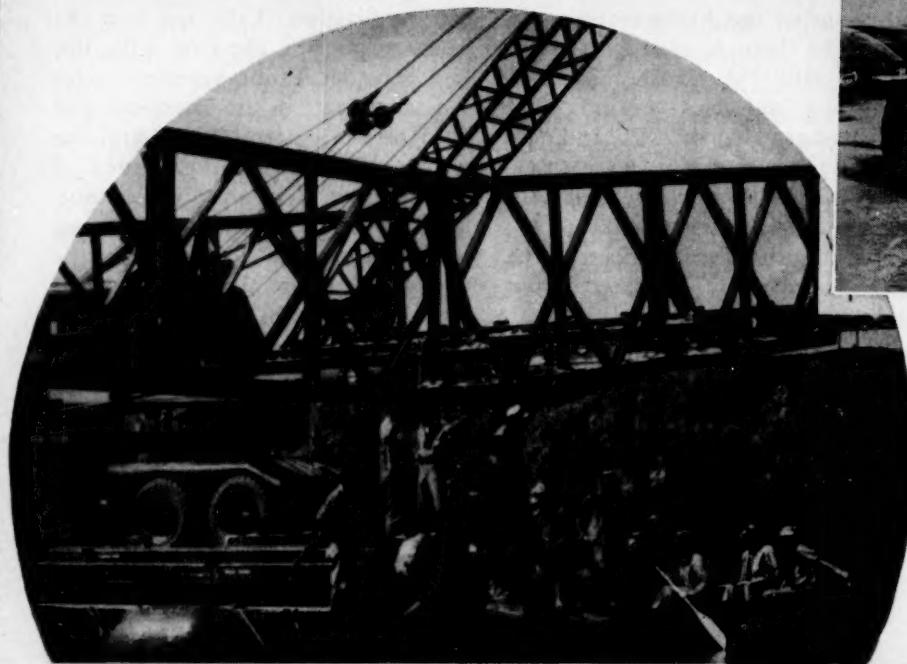
Only simple, uncomplicated measures could be employed for the breakout. An unhesitating, audacious decision of the division commander was necessary. For a breakout at night, tanks with Pioneers and armored infantry were placed in the forward line as a driving wedge. The Soviets were overwhelmed by the mass concentration of the attack, which really was no mass at all, but the illumination of the terrain made our force appear larger in numbers of troops and vehicles than it actually was. Had the division commander not succeeded in breaking out with his troops from the encircled city, the same fate as STALINGRAD would have overtaken them, even though on a smaller scale.

Lessons

When I returned to the Russian Theater in the fall of 1943, I did not have too much experience with the conduct of war in Russia, and I believed this was advantageous to me

Russians, we had to fight in a strange land under unknown climatic conditions. In spite of this, combat morale, adaptability, higher intelligence and the willingness to sacrifice still balanced the superiority of the enemy. The Russian combat leadership was to a definite degree, inflexible; the ability to react quickly was lacking—this shortcoming was typical of the Soviets. The Russian is by nature stubborn and inflexible and the communist system has even strengthened these characteristics. The advantage of the Soviet soldiers are his unbelievable toughness, his ability to endure extreme hardship without complaint, his affinity for his natural environment and inborn sense of terrain utilization—especially in his own country. To this, add his almost oriental fatalism and the indifference with which he faces death. A greater advantage for him was the German front, which became long, open, unconsolidated, loose and irregular, permitting even larger Soviet units to infiltrate again and again, but which also often gave him great success initially for the brutal, inflexible system of attack he used.

US MC



By LtCol Robert L. Smith

a new look FOR THE EN

THE TOOLS OF THE ENGINEERS have changed since the end of World War II. And like the change in the tools of the engineer there has, likewise, been a very radical change in the organization of the Fleet Marine Force engineers.

The "new look" is here in the FMF engineer units—a face lifting that features:

1. Entirely new equipment with greater emphasis on mobility and speed, with greatly increased working capacities.

2. A new organization providing engineer support at all levels in the FMF as well as a far greater measure of engineer support at each of these levels.

3. A division engineer battalion that has equipment five times greater in value than its WW II counterpart—a strength of nearly twice the old unit (bringing it up to 1,000 officers and enlisted) along with enough engineer equipment to move five times as much earth as the old.

Typical of the improvements found in the new model is the provision of the Hyster crane for each of

the engineer companies. In spite of the formidable nomenclature "crane, revolving, tractor mounting end" this very useful tool brings to the companies a high speed crane-shovel combination that can move rapidly from job to job and which has a complete array of attachments for moving earth, ditching, loading and lifting.

Like the Hyster crane, the "new look" has brought earth moving potential to the engineer company in another form—the five-ton capacity dump truck. With nine of these monsters in each company, every engineer squad becomes a mobile unit with its five-ton truck and one-ton trailer. Using the Hyster to load and the nine, five-ton dump trucks to haul, one engineer company can move as much earth as the entire World War II battalion.

The mobility of the engineer battalion is assured by the total of 179 trucks and trailers. Of these vehicles, 56 are five-ton dumps and eight are 25-ton low bed machinery trailers.

A big improvement in mobility, speed and versatility is the addition of the MRS (Mississippi Road Service) rubber tired tractor to the en-

gineer battalion. Eight of these all-wheel-drive power houses, provide high speed prime movers for the eight, 25-ton low beds. They are equipped with dozer blades and double-drum power control units for pulling the big 18-yard scrapers. With these attachments, they may be considered a general engineer tool, equal in working ability to the biggest tractor-dozer but yet having a unique degree of speed and maneuverability.

Also in the tractor line, the new TD-24 tractor (with angle dozer) brings to the engineer battalion new power never before available. It looks just like the old faithful TD-18 angle dozer except for size. When placed side by side the old looks like a child alongside his 25-ton pappy.

Just what change the "new look" has brought to the organization of the engineers can best be seen by an examination of the FMF engineer units.

Generally, the term FMF engineer units encompasses all engineer units in the FMF, including those organic to subordinate divisions of FMFPac and FMFLant. The first distinction that can be drawn between various engineer units is to classify them either as "Division Engineer" units or "Force Engineer" units.

The division engineer units are

those that are organic to the various Marine divisions. It is this unit whose equipment has been contrasted with the WW II battalion in preceding paragraphs.

In the other category of FMF engineer units, the so-called Force En-



ENGINEERS

gineers, are found the various units that usually operate directly under force headquarters and are not organic to any particular Marine division. These are the large and most important force engineer battalions, the fixed bridge companies, the floating bridge companies, the explosive ordnance disposal companies and the topographic companies.

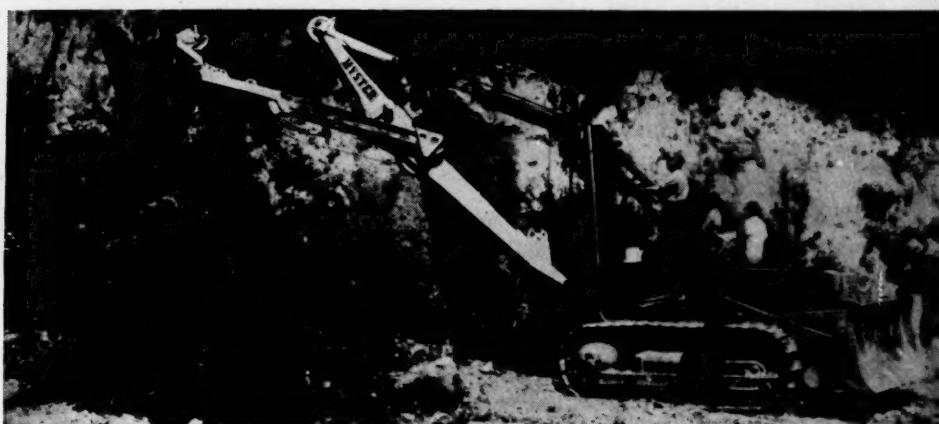
A bit of historical comparison is justified at this point to clear up the confusion with WW II terminology. The Marine division started and ended WW II with an engineer battalion organic to it, so the "new look" in the division engineers extends primarily to improvements to the same general structure. There was a time during that war, however, when the division actually had what was called an engineer regiment. These regiments were nothing more than a regimental headquarters superimposed over a standard division engineer battalion, a division shore party battalion and an attached Naval Construction Battalion. The presence of the regimental headquarters had little effect on the

amount of work required of, or accomplished by, the engineer battalion itself. The point is brought up here, since there is always someone with a long memory who will remember that we did, in fact, at one time have an engineer regiment.

Not quite so straightforward in their historical development are the force engineer units. The present day force engineer battalion had its origin in the "Separate Engineer Battalions" of WW II. These in turn were derived from the original "Aviation Engineers" formed in 1942 when the need for airfield construction beyond the capability of the

rean conflict began, the bridge companies were formed. It is indeed quite a change in concept, when the statement can be made that there is no bridging equipment in either our division engineer battalion or our force engineer battalion. The present concept, however, makes those bridge companies and their equipment available to every force operating in the field and it is customary to attach bridge units to the division engineers when the need for bridging arises.

Equally startling is the "new look" in the prefabricated bridging equipment itself. The old 18-ton



preoccupied division engineers made itself felt. The mission of both of these older units was to construct fields, camps and roads in rear areas, normally working under the various amphibious corps headquarters.

The development of the remaining force engineer units will bear a brief discussion before turning in detail to the more important division and force engineer battalions. The two types of bridge companies (the floating bridge companies and the fixed bridge companies) are new arrivals in the Fleet Marine Force.

During the last war and up until the start of the Korean War, bridging equipment was either organic to division engineer battalions as standard equipment or it was carried as Class IV equipment, to be made available to them when needed.

At about the time when the Ko-

capacity temporary pier of WW II, the laboriously constructed timber trestle bridges, even the old standard Bailey bridge are fast disappearing from the scene. The Bailey (still around but classed as limited standard) has been replaced with the much improved Class 60, fixed aluminum panel bridge. It will take greater loads for longer spans with much shorter construction times than were achieved with the Bailey. The emphasis in all the new bridging is on lightness of weight, speed of erection, high capacity and minimum number of parts.

Since the fabrication of bridges of 60-ton capacity during combat is virtually impossible, from a military point of view, all of the modern bridging equipment is prefabricated into standard bridge sets and all made to take at least a 60-ton load.

The "new" FMF engineers will be ready to fill the needs of an atomic age Marine Corps

To span wide rivers, the new floating bridge combines all of the features mentioned above, including the 60-ton load requirement and can be erected at the rate of 300 feet every six to eight hours. Even the old foot bridge has a "new look" with all aluminum construction, self bailing floats that will hold up in fast water and construction time that is measured in minutes per hundreds of feet.

The explosive ordnance disposal companies are the outgrowth of the bomb disposal units that operated with our divisions. They have a broader mission under the present concept and hence are now a much larger unit. Like the bridge companies, they are a force unit operating under force control until the need for them arises at division or lower level. Then appropriate sized units with equipment will be assigned down to the lower level for closer support.

The topographic companies are designed to do the mapping (both the making of the maps and the reproduction of them) for the FMF. We have had similar organizations for many years, sometimes in the divisions and sometimes out. The present organization separates it entirely from the Marine division and puts it under force control, where it will no doubt operate even during an operation, producing the maps that will be distributed to the divisions.

Now to return to those two most important of the engineer units, the division engineer battalion and the force engineer battalion. We have already introduced the division engineer battalion by emphasizing the new mobility and greater capacity for work as compared with former division engineers. To take a closer look at the division engineer battalion, it would be well to discuss very briefly the organization of that battalion.

The "new look" gives the battalion a headquarters company, a service company and four identical engineer companies. The separation of headquarters and service functions into two separate companies was accomplished purely for convenience, since the combination of the two into one company would result in an unwieldy unit. The great size of the headquarters and service units in the engineer battalion is due to the

basic concept behind the new organization: to retain the bulk of the specialized skills and equipment at one level and to keep the engineer companies as light and mobile as possible.

The engineer companies are the working units that contain the basic engineer skills to which can be attached the specialized equipment and operators as needed. By that means, the engineer battalion commander keeps under his direct control the bulk of the heavy and specialized equipment to distribute it amongst his working units, in order for it to be employed at maximum efficiency. Consequently, specialized equipment such as water supply and electrical generating equipment, or equipment that has a single or limited purpose, or that is extremely bulky, is found in the headquarters elements.

This does not mean that the most important engineer companies are slighted. They are short on certain specialized equipment but long on the skills and equipment best suited to their mission. The engineer battalion itself has the mission of providing engineer support to the division as a whole—a mission that becomes very complex. On the other hand, the engineer company's primary mission is to provide close engineer support to the infantry regiments. This is combat engineer support characterized by improvisation, by mobility and speed—a type of support where more attention is paid to the results obtained than to the manner of achieving them. It is considered pioneer work and is accomplished primarily by the basic skills and equipment of the engineer companies. Consequently the engineer companies are equipped with plenty of dozers and hand tools, plus basic engineers who can do lots of jobs, but few specialists, and sufficient transportation to make them highly mobile. If their particular task at the moment requires equipment or specialists beyond their ability, then tools or personnel can be provided from the headquarters elements. Or one of the headquarters elements may even be assigned that particular task.

Since it has been indicated that engineer companies support infantry regiments, the means by which this is accomplished should be brief-

ly touched on. In an operation it is normally considered that one engineer company supports each regiment. This may vary in any particular situation, depending on the needs of the regiment supported, as well as the needs of the remainder of the division. It is quite normal for the company supporting a regiment to be reinforced with elements of headquarters and service companies to provide extra heavy equipment or special equipment, not normally part of that company. Likewise, certain major tasks in support of that regiment might be assigned to other elements of the engineer battalion to allow the engineer company to concentrate on the close combat support missions for the regiment. The latter is particularly true in a fast moving attack situation where the emphasis is to the front and the biggest requirement is in mine clearance, demolitions and hasty road construction. Here, a large bridge or main supply road to the rear of the regiment would probably be assigned to some other element of the engineer battalion.

The fourth engineer company in the engineer battalion provides the

... organic to all units



means for the engineer battalion commander to augment the three companies normally supporting the regiments. It is sometimes necessary to provide two engineer companies, or a company reinforced by part of another, to one particular regiment. In addition, the fourth company gives the engineer battalion commander a working unit to perform general engineer tasks in the division rear and service areas. The headquarters and service companies are primarily specialists trained and equipped for specific tasks only. They are not working units. Therefore, any major task that the engi-

form all engineer work in the force service area, build the airfields and provide engineer assistance for any Marine air (based ashore) and give direct assistance to the division engineers of the various divisions as needed.

The force engineer battalions have certain items of engineer equipment not found in the division engineers, either because of their lack of mobility or limited usefulness, e.g., well drilling equipment, rock crushers and asphalt distributors. In addition, the force engineers have more heavy engineering equipment both by quantity and capacity. Consequent-

sions in an operation might be considered. Each division would have its organic division engineer battalion supporting it. In addition, each assault division might well have a force engineer battalion backing it up to give depth to that engineer support, so that the division engineer battalions can concentrate their attention to the front. The force service area to the rear would require at least one more force engineer battalion to perform the complex task in that area. If bridging were necessary in the division zone of action, then appropriate bridging units with their bridging equipment would be assigned to those divisions. If not, then, without a doubt, bridging would be required to the rear of the divisions. In that case those bridging units would be assigned to work with the force engineers operating in that area. The explosive ordnance disposal company would be broken down so that each major tactical unit, as well as force headquarters, would have explosive ordnance disposal units assigned to them for their use. Likewise, the force headquarters would have a topographic company to provide the necessary maps. Lastly, force engineers would have to be provided to support any Marine air assigned to the hypothetical force.

Greater loads, longer spans, shorter construction time

neer battalion undertakes must be accomplished by the elements left after the regiments have been allocated their required close engineer support. The fourth engineer company forms the backbone of that general support element.

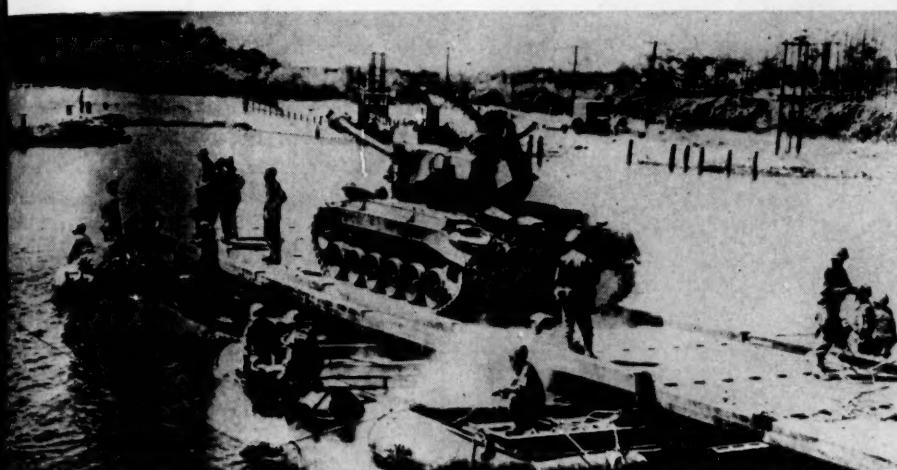
With that brief look at the division engineers it is time to turn to the other major engineer unit, the force engineer battalion. The force engineer battalion is very similar in both organization and equipment to the division engineer battalion. Slightly larger (about 150 more personnel) and more heavily equipped, it is designed to perform the heaviest tasks accomplished by Marine Corps engineer units. Its mission is to give depth to the engineer effort by performing engineer work to the rear of the divisions, to relieve the division engineers of the heavier engineer tasks, to provide support to Marine air and to provide engineer support to the Marine force in the field. Force engineer battalions per-

ly its potential for major construction projects is greater than the division engineers' potential. Its organizational structure is identical; however, it is slightly larger all the way around. Its equipment and training suit it more for heavy engineer tasks, major road, airfield and camp construction, etc. Whereas its division counterpart places its emphasis on hasty road construction, light airfield construction and the close combat support types of missions such as hasty bridging, fording, mine laying and clearance, demolitions and field fortifications. However, because of the similarity in equipment, organization and spirit of the two units, there is little doubt that either unit could perform all of the tasks normally assigned to the other.

To tie the whole picture together concerning the nature of the engineer support provided by the "new look," a hypothetical example of a force of two or more Marine divi-

If this is the "new look," what about the future? Will the "new look" stop here? Hardly. There will probably be many more "new looks" as we progress into the atomic future. It is difficult to guess at this time what they will be like for there are just about as many concepts for future operations as there are thinkers. There is one certainty, however — whatever the newer "look" will be, there will be a need for more engineer support. As we go up in the air we need more and better airfields, as we go faster we need better roads and bridges, as we spread out we need more engineer support to fill the gaps, as we depend more on machines we need better means to move them. The recognition of this need for greater engineer effort in the future is evidenced by these very changes that have already been made, and by the experimental work now in progress at our various developmental agencies.

USMC



THE LONELY ART



By Maj

Reginald Hargreaves, M.C.

MODERN WARFARE MAKES MANY demands upon its practitioners, over and above the primary qualifications of courage and physical fitness. Training designed to render the soldier an accomplished technician and the master of a complicated gallimaufry of weapons is, in the main, both thorough and remarkably well co-ordinated.

But there is one element of modern conflict which is very much inclined to be scamped, if not entirely overlooked — the highly-skilled, intensely individual, if rather lonely art of the sniper. This is sincerely to be regretted, although the reasons for neglect are not far to seek.

All wars start with the hope, optimistically held by both sides, that the conflict will be kept fluid. And sniping, in contrast to snap-shooting (of which it is the ultimate extension and refinement) is very largely the outcome of the fixed outpost-line or trench system, only brought into being by warfare of position.

It is equally obvious that sniping is an art of comparatively recent development, since its perfected

practice obviously had to wait upon the fabrication of real weapons of precision. As well send a man sniping with a blunderbuss as with firearms of such irresponsible and incalculable aim as the French "Charleville" musket, with which so many of Washington's troops were encumbered, or the equally erratic "Brown Bess" of the contemporary British redcoat.

The Peninsular campaign of 1808-14 saw Gallic *voltiguers* and *chasseurs-à-pied* confronted by the green-jacketed marksmen of the 95th Foot (subsequently, Rifle Brigade) and their light infantry comrades of the "Light" Division — the famous "Light Bobs" whose introduction into the British Army was a direct outcome of the experience gained in North America between 1775 and 1781. They were, amongst other things, the first troops to go into action armed with the new Baker rifle.

Weighing nine and a half pounds and with a barrel with seven grooves in its 30-inch length, the firearm was of .653 caliber, with a flint-lock firing mechanism. Not an ideal

tool, by present-day standards, it was, nevertheless, by far the handiest and most accurately firing weapon then extant. With an extreme range of 500 yards, and permitting real marksmanship up to 200 yards, the wonder is that so little use was made of it for sniping purposes.

However, Spanish guerrillas, under such leaders as Porlier, El Empecinado, Francisco Espoz y Mina, Julian Sanchez and the gallant Martinez made good use of the arm to achieve complete domination over the lines of communication leading from France to the zone of the armies in Spain.

For amongst these swarming guerrillas were scores of men whose deadly marksmanship, powers of concealment and unwearying patience qualified them to rank with the most accomplished snipers in history. Perched on some eyrie commanding the highway along which the ammunition and provision convoys had to make their way, and undetectable against their tawny background, they held the passing traffic entirely at their mercy — and they were not of the kind that spe-

cialized in mercy to an enemy!

As their toll of slaughtered Frenchmen mounted, more and more combat troops had to be withdrawn from in front of the British to try and afford the convoys' demoralized service troops and muleteers some sort of protection. But to strengthen the escorts was to do little more than to multiply the number of targets; for as the Spanish proverb put it, "What cares the wolf how many sheep there be?"

An apparently sleeping hillside would suddenly spout a little puff of smoke, and a blue-clad transport driver would topple in the dust before the report of the shot had achieved its first echo. It was idle for the men of the escort to swing outwards and blaze away indiscriminately at the hillside. For answer another rifle would crack from a different coign of vantage, and another shako would roll heavily across the ruts.

As time went on, the long and vulnerable lines of supply were subjected to a veritable reign of terror. It even became necessary to build strongpoints every few kilometers, between which the panic-haunted

had been hoisted to his feet on an empty saddle and the horse led under the overhanging bough of a tree.

Having adjusted the noose about the doomed man's neck, the burly corporal flung the rope's length over the projecting limb, signalling to a couple of troopers to catch the dangling cord and hold on to it firmly. But as he strode forward to smack the charger's flank, to set it in motion, a single report rang out. It was followed by a rending crunch as the brittle projecting branch snapped under the impact of the heavy leaden bullet. Then, as the *bandista* tumbled from the saddle out of the line of fire, Robledo's single shot was followed by a shower of missiles that sent the troopers leaping for their horses. Retreat was the only prudent course when the marksmen of Empecinado's *banda* went into action and the Frenchmen were only too glad to get clear with nothing worse than a few flesh wounds; which they regarded as a small price to pay for their deliverance.

The 20-years struggle with Napoleon yielded one remarkable, if

entirely unorthodox example of sniping. However, its consequences were so momentous as to leave their mark on world history.

On the morning of October the 21st, 1805, Pvt Robert Guillemand, one of a detachment of sharpshooters on service with the French fleet, clambered up to his battle station in the fighting-top of the *Redoubtable*. It was hardly an ideal sniper's post, since inability to merge into the background was further aggravated by the sway of the mast-head, which rendered accuracy of aim extremely difficult.

But Guillemand was an experienced shot and not without practice in the work to which he had been assigned. As he glanced across at the English fleet bearing down on the combined Franco-Spanish armament, he could make out Lord Nelson's *Victory* steering straight for the *Redoubtable*, with the obvious intention of breaking the line. He also had time to note with grim satisfaction that the fighting-tops of all the English ships were unmanned. In such fortunate circumstances he would be free to concentrate his fire on such targets as ex-

Guile and patience are requisites for the sniper's lethal work

camioneurs scurried with darting eyes and fear — fear of the menace that lurked behind every lonely crag and withered pine — turning their bowels to water and clutching their hearts with icy fingers.

For with weapons that a modern expert would reject with derision, these keen-eyed men of the mountains rarely wasted a shot. The story is told, for example, of a certain Robledo, a member of the *banda* Empecinado, whose rifle played a notable part in the rescue of one of his comrades.

Tomasso had been caught by a patrol of Dragoons, and the gunpowder stains blackening thumb and forefinger being susceptible to one explanation only, his arms were swiftly bound to his sides, while a couple of picket ropes were hastily knotted together to form a makeshift noose. By the time news of the capture reached Robledo, and brought him and one or two others hurrying to the rescue, the captive





Bettmann

Nelson—laid low by a sniper's deadly skill

posed themselves along the enemy decks.

Peering down through the drifting smoke, Guillemard could make out the figure of a man in admiral's uniform, the breast of his jacket bright with glittering decorations, who stood apart on *Victory*'s quarterdeck. The range was no more than 15 yards, and the Frenchman brought his weapon quickly to his shoulder and took careful aim. Wedged in between the two English ships, *Redoubtable* rode easily on a gentle swell. She was almost steady as Guillemard pressed trigger, and the bullet sped to its billet with unerring aim.

In the hour of his greatest triumph England's most famous admiral had fallen the victim to a sniper's deadly skill.

The conditions of siege warfare which prevailed in the Crimea—with parallels, epaulements, redoubts and every conceivable variety of earthwork—should have lent themselves admirably to sniping. But the "Brown Bess" with which the British were still armed at the outset of the campaign, could scarcely claim to rank as a weapon of precision. Neither was the Russian muzzle-loading percussion musket capable of accurate fire at distances of 240 to 250 yards, the average interval separating the Allied trenches from the bastions of defending Sevastopol.

But if the art of the sniper made little progress in the Crimea, it was a very different story throughout the siege of the Lucknow Residency at the time of the Indian Mutiny. Linked together by hastily-contrived defenses, the stronghold was manned by a garrison of about 1,700, of

whom not more than one-half were Europeans.

Surrounded on three sides by a huddle of mosques and native houses, separated from the Residency's line of breastworks and outer walls by no more than the width of the street, the whole of the circumvalation was exposed to a fire that was as incessant as it was for the most part wild and ill-aimed.

The only way fire could be returned was from concealment. The garrison came gradually to encourage the assailants to occupy a point and to have confidence in occupying it. But they marked well the direction; and during the night they bored holes in that direction. In the morning the enemy would come up by twos and threes to occupy their chosen post. Then the muskets would be discharged. The result was almost invariably successful.

But there was one wily marksman whom this guileful device entirely failed to snare. Choosing his coign of vantage with infinite subtlety and care, he would await the appearance of a likely target with an unblinking watchfulness that dawn-chill or the heat of the noonday sun in no way seemed to affect. Unseen, undetectable, he would remain inactive for hours at a stretch. But if a gleam of scarlet tunic or white cap-cover came to reward his vigil, then his swift, unerring shot took toll with a deadly precision that scorned the waste of a single cartridge.

In wry tribute to his outstanding skill, the sweating men of the garrison dubbed him "Jim the Nailer."

To give the exact tally of his score against the Residency's garri-

son is as impossible as to cloak him with a specific identity or pronounce upon his ultimate fate. For with the relief of Lucknow no more was heard of him; although as "Jim the Nailer" he passed into legend as imperishable as the story of the siege itself.

In the normal course of warfare the art of the sniper is far more likely to be cultivated by the side in possession of the superior firearm. The exception to this general rule was provided by the Franco-German campaign of 1870-71. The German infantry were armed with a serviceable enough weapon in their breech-loading "Needle" gun, but it was

Bettmann



Boers—born marksmen

definitely outraged by the French *chassepot*; a fact of which considerable advantage was taken when the lines of investment closed in about beleaguered Paris. Sniping was continuous from the Gallic outposts, and the heavy toll exacted from the Germans manning the forward positions, as from the "slow patrols" sent out to probe into "no-man's-land," occasioned very serious concern to the company and battalion commanders whose men had fallen victims to the marksmanship of several daring and elusive shots.

The area between Raincy and Ville Evrart, on the eastern outskirts of the besieged capital, was held by a regiment forming part of Montbe's 12th (Royal Saxon) Army Corps; and it was their unhappy fortune to be particularly victimized. From an upper room in the gardener's cottage of the Château

de Launay, a French sniper had bowled over man after man, shooting from such a range that effective return fire from the German foreposts was out of the question. Completely baffled how best to deal with the situation the major commanding the battalion was only too willing to give his consent when a young cavalry officer, Ensign Baron Steinfurst-Wallenstein offered to try and stalk the enemy marksman and catch him at a disadvantage. A noted gameshot, he had brought his favorite rifle with him on service and he was convinced that his trusty weapon could be relied upon to even-up the score.

Passing through the snow-bound outposts before it was light, the little Baron took up position in a clump of evergreens at an oblique angle to the gardener's cottage, whose glassless upstairs window gaped black and empty-looking. With the wintry sun slowly clearing the haze, the watcher could just perceive a hint of movement at the back of the room, from whose shadows the sniper obviously kept observation on the German outpost line curving about Raincy's outskirts.

Three times during the day the flash of a shot lit the bedroom's somber darkness, and three times the watcher glanced eagerly along his sights, hoping for a glimpse of the man who kept himself so carefully hidden. Once there was the momentary gleam of a gun-barrel, and the ensign's finger almost tightened about the trigger. But realizing the unlikelihood of ever getting a second shot should the first fail to find its target, the little Baron soberly held his fire; and dusk found him stealing back to his own lines, far from discouraged and fully determined to resume his vigil on the morrow. Sooner or later the Frenchman would relax his precautions and expose himself and then his patience would be generously rewarded.

There was a good deal of rather bitter chaff when Steinfurst-Wallenstein reported back at battalion headquarters; for one dead and two wounded men bore painful tribute to the sniper's unimpeded activity. But the little Baron took it all without comment; and dawn found him

again at his post of observation.

On the second evening, when Ensign Baron Steinfurst-Wallenstein reported himself back, the battalion commander curtly ordered him to return to his regular duties.

"*Zu befehl, Herr Major,*" the young officer dutifully responded; "but when it is light enough for you to use your field glasses, I think you will find that my time has not been wasted."

Still slightly incredulous, the battalion commander was standing by at first light to focus his binoculars on the gaping window of the gardener's cottage. From it hung down

equalled by the deadly accuracy of their aim. Furthermore, the peculiar refraction of the light which characterized the high *veldt* was a phenomenon with which the Boers were already familiar, but to which the Britishers had gradually to get accustomed. Until they did, their ability to take accurate aim was at a serious disadvantage. In any case, it was soon found that the Afrikaander avoided positional warfare in favor of running fights and ambuscades. So it was mostly under the close-siege conditions of a beleaguered town, such as Mafeking, that the art of the sniper underwent



In static warfare—the power to dominate his own sector

the body of a man, pitched head foremost over the sill; his rifle, released from his nerveless hands, making a long, dark streak against the snow-drift piled up against the wall below.

As Steinfurst-Wallenstein subsequently explained, the sniper had fired three times during the previous day, loosing off his final cartridge just before dusk. As always, he had aimed and fired from the back of the room; but in the fading light he had risked coming forward to see if his last shot had taken effect; thrusting his head and shoulders through the blank window space to peer across at the German outposts. It was at this moment that the Baron had brought his sights to bear; the opportunity for which he had waited so long and patiently had come at last; and the account was closed with a single pressure of the trigger.

At its outset, the South African War found the British confronted by a race of born marksmen, whose skill at concealment was only

its chief development. Movement in the outer perimeter of the little town's defenses demanded considerable circumspection. For the surrounding *veldt* offered an exceptionally useful background into which the Boer marksman merged himself with uncanny skill; and any careless movement behind the sandbags brought a remarkably swift and unerring reply. Not that the Boers had it entirely their own way. In Baden-Powell's hard-bitten garrison were a number of troopers of the Rhodesian Regiment and British South African Police, men as accustomed to the ways of the *veldt*, and as chary of wasting a cartridge, as the *vortrekkers* themselves. The best shots of a remarkably straight-shooting crowd were encouraged to creep out of the defenses at night, carrying an entrenching tool and a greeny-fawn window blind. Having arrived at a position overlooking the Boer gun emplacements—carefully plotted beforehand—the marksman would dig a pit for himself under cover of darkness. With

daylight, he would coil down in his lair, with the window blind stretched over him to hide the hole; and there he would "lie doggo" until sundown. With the light behind him and shining on his opponents, he would go into action against the Boer gunners with deadly effect; for being in the eye of the sun himself, it was almost impossible for his enemies to locate him and retaliate. Furthermore, a few dummy figures, *not* quite so carefully hidden away, could be relied upon to draw the Boer fire as surely as would a slouch hat on the end of a stick, discreetly exposed at intervals behind the defense's breastworks.

Guile and patience brought to the service of marksmanship—in that lies the art of the sniper. It was brought to perfection in the long years of trench warfare on the Western Front—where what were virtually siege conditions prevailed for over three years—during the World War of 1914-18.

At the outset, the Germans had distinctly the better of it; for their preparations for this particular form of warfare had been so thorough that by the end of 1914 they were employing no less than 20,000 rifles fitted with telescopic sights. Moreover, they quickly realized that, from the sniper's point of view, the neat, beautifully stacked trench parapet, with its sandbags meticulously aligned "head and choke," was little short of disastrous. Observation over the top of such a trench was out of the question, while to conceal a loophole in its smooth, unbroken, monochrome surface was wellnigh impossible. On the other hand, a tumble of sandbags, blue, pink, beige, black, brown and red, stacked in apparent confusion, made it extremely difficult to "spot" an observer; while the apparently casual jumble was prodigal in crannies that could be turned into loopholes; of which the dummies were as hard to mark down as those designed for use. With up to six sniper's rifles per company, for a time, the Germans entirely dominated the front line, inflicting many casualties on troops unable to organize those swift reprisals which they desperately needed to restore a distinctly lowered morale. With the

forest-guards of Bavaria and the *Jaegers* from the game preserves of Rominten and Hubertsstock districts to draw upon, there was no lack of excellent shots, accustomed to work with telescope and telescopic sights, and—most important detail—skilled in correcting and adjusting the latter should occasion require. In all ways, they were a deadly menace and, for a time, they secured and maintained the upper hand.

But if the German genius is for organization, the British faculty of improvisation is capable of bringing about astonishingly rewarding results. Under the inspiration of one or two real enthusiasts—big-game hunters, noted stalkers, Highland gillies, the countryman with a bit of experience as a poacher and the like—instructional units were speedily brought into being and a *modus operandi* worked out which, through experiment, trial and error, set a pattern for the art of sniping which subsequent experience, in both world conflicts, as in anything approaching position-warfare in Korea, has only served to endorse.

THE BEST RESULTS, it was discovered, were secured by a team of two men, one of whom "spotted" and marked down the target, while the other brought fire to bear on it. That the men should be interchangeable was found to be essential, for nothing wearies and blurs the eyes more than too long a spell of "spotting." Equally important was the painstaking instruction to ensure complete mastery of sight-adjustment. For if a telescopic sight, set on a 4-inch base, is a mere matter of one-hundredth of an inch out of its true alignment, it will shoot wide of the mark to the extent of nine inches in a hundred yards, 18 inches at two hundred and so on. On the Western Front in Korea an organization was always at hand to undertake any sight-adjustment that had proved too tricky for local talent to handle properly—a precaution never to be overlooked.

With the telescopic sight set, not on the side, but, as it should be, on the top of the barrel, it was found possible to use a smaller loophole; which of course was always opened from the side, and carefully screened at the back so that no light shone

through it. It was soon proved past all peradventure that a broken, tumbled trench line was a *sine qua non* for the successful concealment of snipers' posts. But while an isolated house had to be avoided like the plague, since it could be pinpointed and demolished by artillery fire, an extensive rubbleheap of fallen brick and masonry offered ideal conditions for concealment—as the survivors of the Cassino battle will readily bear witness!

Trees invariably proved a snare and a delusion; on the crowded Gallipoli peninsula several venturesome Turkish snipers, having eventually been spotted and marked down, were blasted out of their leafy vantage-points by a burst of machine-gun fire.

Obviously, whenever possible snipers should be supported on either flank by other snipers' posts; and while this is not the piece to enlarge upon the invaluable help to Intelligence that is afforded by the sniper-team's co-ordinated, round-the-clock observation of the enemy in front of them. It can safely be said that in close-warfare, with four good telescope-men to a battalion front, very little that happens in the opposite line can go unremarked and unrecorded.

But, in static warfare, it is for his power to dominate his own sector of the front that the sniper and his trusty rifle are most to be valued. The sniper who can really use his rifle is worth a couple of LMG teams; for not only is his killing-power extensive and ubiquitous, but the psychological factor—fear of the killing-shot out of the blue—has a distinctly lowering effect on enemy morale.

It is not to be thought, however, that the sniper is without his uses in an advance; disposed on the flank of a forward thrust he can perform most valuable work by picking off machine-gun teams, and such enemy leaders as seek to rally their men to continued resistance and the ensuing counterstroke.

To men of good vision and reasonable intelligence, the art of the sniper is not too difficult to acquire. But it has to be taught; near-perfection has to be reached before a man can be ventured in the line. For there are only two sorts of sniper, the quick—and the dead! USMC

passing in review

Tactical Atomic Problems . . .

ATOMIC WEAPONS IN LAND COMBAT—(Second Edition)—Col G. C. Reinhardt and LtCol W. R. Kintner, 239 pages, illustrated. Harrisburg, Pa.: Military Service Publishing Co. \$3.95

Since the publication of the first edition of *Atomic Weapons in Land Combat* in mid 1953, the great strides made in the atomic field have required a second edition to bring the book up to date. The authors recognized this fact and have given us a greatly improved book.

The avowed purpose of this work is—"To explore, primarily at division level, the problems which atomic warfare poses to division, regimental and battalion commanders; to amplify for the individual soldier the manner in which atomic weapons will affect his performance and his chances of survival in battle." The purpose is well taken and amply fulfilled as the authors orient the reader by placing atomic weapons in tactical focus, leaving strategy primarily to others. The effects of atomic weapons on your outfit are discussed in terms understandable by all as well as a comparison of means of delivery available.

After this orientation the reader is led through a new look at offensive tactics with a discussion of basic problems of the offense. Tactical employment of atomic weapons in the defense, which the authors indicate—"will help solve the West's most critical military problem—numerical weakness on land"—is not slighted.

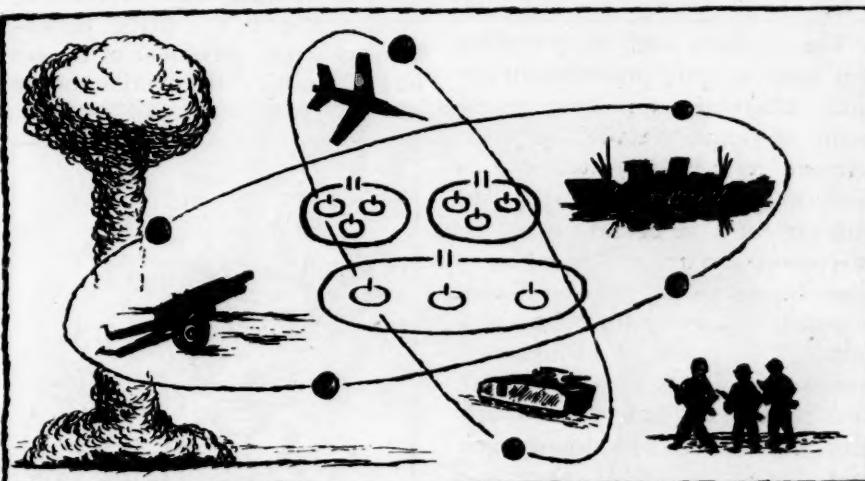
Airborne, amphibious and special operations such as the arctic, barren deserts, cities and fortified localities are next in line for an appraisal in the light of atomic weapons.

Logistics, a subject often slighted in an examination of tactics, is covered in considerable length and may be summed up by the statement from the book—"The logistic worries of the field commander are

aggravated by the tactical use of atomic weapons." The reader is not left entirely on his own with this problem, however. Recommended solutions to the problems of logistics are presented.

The indispensable ingredient—Training—is brought into sharp

ganization will be condemned, in part, by all combat arms since their "task forces" do not meet *all* the requirements of present doctrines of *all* arms. However, their discussions should bring forth agreement by their critics or a better solution to the problems involved.



focus by the authors when they set forth some training problems with solutions. This leads logically to the basic discussion of command in atomic warfare. The authors point out that, "Each innovation in warfare has rendered more difficult the fundamental problem of command—how to arrive at the correct decision." In an atomic war commanders must be bold and exploit the atomic attack to the utmost. In this connection, "A new slogan for atomic tactics paraphrases Napoleon: Exploitation is to Destruction as three to one!" As always, "Command decisions, therefore, remain an art where an ounce of genius is worth a pound of competency. . . ."

The reader is not left to shift alone with the many problems presented by the authors. They take us forward for a look at tomorrow's recommended troop organization and the shape of atomic conflict. Dear to the hearts of all "armored" disciples will be the discussion of an organization closely related to the present combat command. As noted by the authors, their proposed or-

This edition has answered, to a large extent, the critics who indicated that the first edition failed to give adequate recognition to armor in their role of battlefield defense and rapid exploitation of atomic attack.

Definitions, charts and tables have been included as an appendix which give a better understanding of the discussion undertaken throughout the book. In the words of the publisher—"You don't need a degree in physics or clearance for high security classification to understand the authors' frank discussion of what atomic weapons can do—to you and to the enemy."

Two deficiencies which must be noted by Marines, are the lack of discussion of helicopters and the Navy-Marine Corps system of close air support. While troop-carrying helicopters are mentioned in passing, no discussion is propounded relative to solving any of the problems by their use. While tactical air is discussed at length, no mention is made of the highly successful Navy-Marine Corps system. The authors

are discussing problems present in all operations in this atomic age and this book is recommended to all as a frank discussion of common problems and some recommended solutions. It is a thought provoking book and presents a wealth of information without the security hindrance of being classified.

Reviewed by LtCol W. C. Ward, Jr.

Radar Primer . . .

ELECTRONICS FOR EVERYONE —

Monroe Upton. 370 pages, illustrated. New York: The Devin-Adair Co. \$6.00

The author's aim in preparing this book is aptly presented in the title. *Electronics for Everyone* explains in simple everyday language, without resorting to mathematics, how the great geniuses of the past and present have made possible the marvelous electronic developments now commonplace in our homes, automobiles and military organizations. This is not a fix-it-yourself handbook for the home mechanic. It is, instead, for those with no technical background who desire a general understanding of electronics devices with which they are in daily contact.

The author assumes an interest on the part of the reader in the history of electrical inventions and frequently gives many interesting details on early discoveries and biographical sketches of the pioneers of electrical science. In progressing through the first half of the book the fundamentals of circuit components are presented. The purposes and functions of inductances, capacitors, resistors, transformers and electron tubes are explained in an easy style with interesting illustrations. This understanding of the "building blocks" of electronic circuits is essential for the explanation of the electronic devices that follow.

The second half of the book contains the information that will stimulate the reader to buy the book. In the same simple language, the reader is given functional explanations of the operation of electronic devices. Chapters are devoted to elementary radio receivers, superhetrodyne receivers, frequency modulation (F.M.) receivers, television

cameras, television receivers and color television. The reader is then introduced to military applications of electronics such as radar, ground controlled approach of aircraft (G.C.A.) and omnirange and loran navigational systems. The final chapters include description of diathermy, X-ray and electrocardiograph machines.

This book should appeal to Marines with little knowledge of electronics who would like an elementary understanding of the electrical devices used in their commands. It should also appeal to the high school student, whom it may influence toward a career in electricity. Because of its generous treatment of the history of electrical discoveries and be-

essential part of our civilization. He was one of the earliest radio amateurs, a World War I Merchant Marine radio operator, a broadcast station engineer, announcer, comedian, writer and "disc jockey." During World War II he worked with military radio and radar and was a member of the Philippine Division of the Office of War Information.

Reviewed by LtCol Robert C. Schmid

The MacArthur Decade . . .

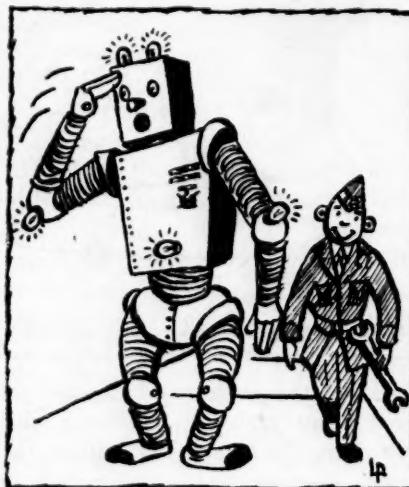
MacARTHUR 1941-1951 — MajGen Charles A. Willoughby and John Chamberlin, 441 pages, illustrated. New York: McGraw-Hill Book Company, Inc. \$5.75

This biographical-history covers a decade of the life of one of the most colorful and controversial military figures of modern times. As a history, the book is concerned with the war against the forces of the Japanese Empire in the Southwest Pacific Area, the occupation and rehabilitation of Japan and the period of North Korean and Chinese Communist aggression in Korea prior to General MacArthur's recall to the United States. The biographical element covers MacArthur as the soldier, strategist, diplomat and man, and the influence that he and his headquarters had on the events during the period.

After General MacArthur was secreted from Corregidor with selected members of his staff, his immediate plan was to return and free the Philippines from Japanese domination. When he arrived in Australia he was dismayed at the scarcity of manpower and equipment available to him to defend against, let alone attack, the Japanese forces even then menacing that continent.

Realizing that a great task lay ahead of him before he could keep his departing promise to the Filipinos and the Americans he was forced to leave behind, he determined, against considerable opposition from the Australians, to advance against the enemy with his shoe-string war machine. It was there that he commenced his "arrow straight" concept of advance from New Guinea back to the Philippines.

His strategy was based on the



cause of its many humorous analogies and anecdotes, it has a place in the reference library of the electronics instructor. Prospective readers should be prepared for the following style of wit: "Filters are as essential in most electronic circuits as Band-aids at a Sunday School picnic" and "When a radar beam swept over one of our ships or planes equipped with IFF, the received waves triggered a small transmitter, which sent back a signal that showed on the scope right next to the pip, saying in effect 'Lay off, brother.'"

The reviewer finds the price non-competitive with popular scientific or technical books. However, those purchasers who are stimulated to further study of electronics will have spent their money wisely.

Monroe Upton was born in 1898 and has qualified himself on this subject by living with electronics during its rise from a curiosity to an

theory that this was the most direct and least costly method of waging war against the over-extended Japanese. Never in accord with the frontal advance strategy of the Central Pacific campaign, he chose to by-pass enemy forces where possible, with the net result that these forces would become ineffective once their lines of communication from the north were severed.

After the Leyte landing in 1944 and the subsequent return to power of the Philippine government, MacArthur felt that he had carried out America's moral and psychological obligation to the Filipinos; and had provided for the certain defeat of Japan by eliminating the Philippines as a vital link in their chain of communications.

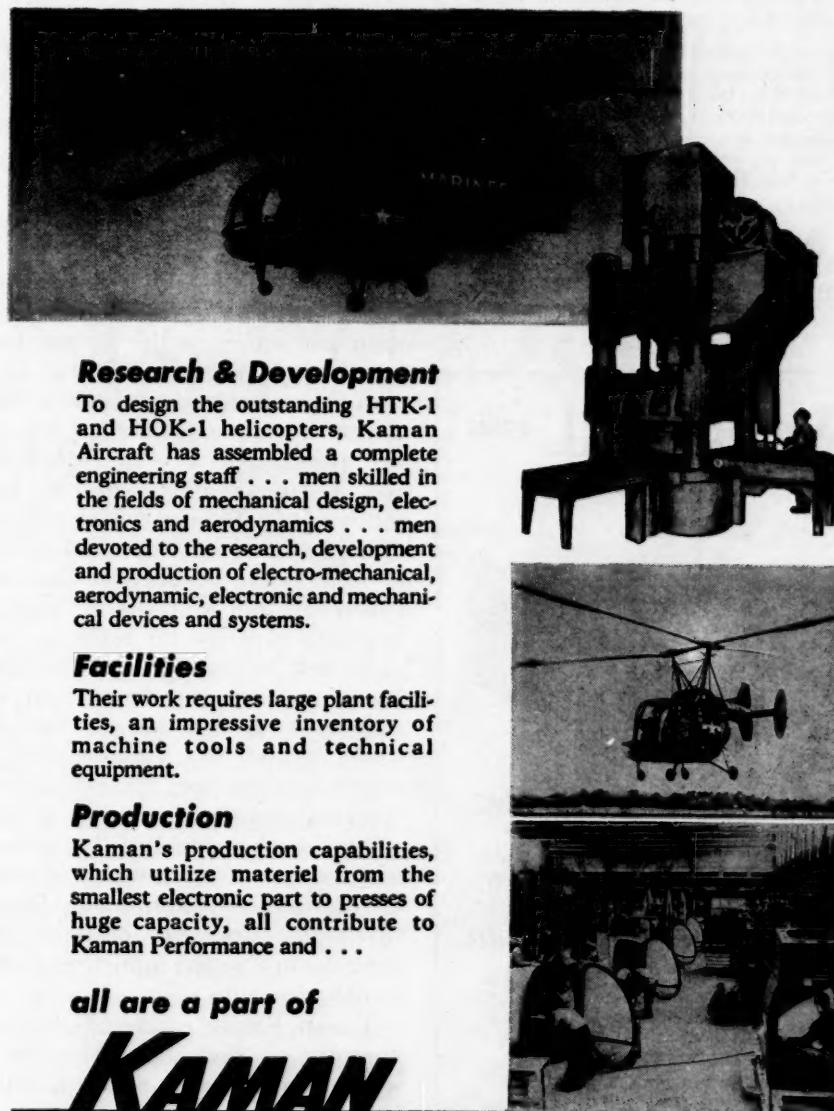
During the occupation and rehabilitation of Japan, MacArthur exercised all of his abilities as a leader and a diplomat. To bring the Japanese people back from the status of a thoroughly defeated nation, which had surrendered unconditionally in accordance with the terms of the Potsdam agreement, to a productive member of the world community required the utmost in tact, forcefulness and patience. Particularly helpful in this undertaking was MacArthur's complete familiarity with the Orient.

When the North Korean Army invaded South Korea and General MacArthur was ordered to intervene, he was again faced with the same problems that confronted him in the Pacific, namely—too few troops and too little equipment. During the time gained while the North Korean Army failed to follow up its initial advantage, he set up his defense at Pusan and planned and executed the brilliant landing at Inchon, thus opening the way for the advance of the Eighth Army to the North. The entry of Communist Chinese Forces into the war, the withdrawal of the Eighth Army, its subsequent counterattack (which in MacArthur's opinion had the Communist Armies at the point of surrender) and finally his relief by his commander-in-chief are the final events in the General's career covered in the book.

The authors attempt to clarify, to their own satisfaction, some of the controversial episodes which oc-

curred during the period. Among their contentions are: 1) MacArthur's Southwest Pacific campaign was not adequately supported from Washington. 2) It was the view of MacArthur's staff that Japan was ready to surrender prior to the use of the atomic bomb. [Its use at that time gave the fact of its existence away, and resulted in its development by Russia.] 3) The strategy of the war as fought in the Central Pacific resulted in a waste of manpower and material, the end result not justifying the losses. 4) Winning the Pacific war would have been ex-

pedited if a unified command had been established in that theater. 5) General Willoughby's most extreme conjecture [and entirely without documentary substantiation] is his allegation that the Chinese Communist Armies advanced into North Korea only because they had been assured by some source that the full might of the United States' air and atomic power would not be used against them and that their Manchurian sanctuary would not be violated. Such allegations as these, made years after the fact, seem pointless and only serve to confuse



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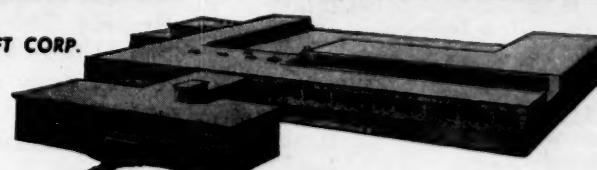
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the reader and detract from the value of the book. The account of the circumstances of MacArthur's recall is particularly cloudy.

It is evident that General Willoughby has edited his supporting data quite thoroughly in order to present only material which justifies the thinking and actions of MacArthur and his headquarters. Unfortunately, a literal history or biography cannot be written when only part of the evidence is presented. Although the character of the real MacArthur at times rises above the flood of details, it is disappointing that an author as closely associated with his subject as General Willoughby was, did not present a clearer picture of one of America's great leaders.

Reviewed by Capt Robert M. Erbland

Latent Fires of Nationalism . . .

SOVIET EMPIRE: The Turks of Central Asia and Stalinism—Olaf Caroe, 300 pages, New York, St. Martin's Press. Maps, bibliography, index.

\$5.00

Sir Olaf Caroe, author of *Wells of Power* and one of the world's foremost authorities on the history, languages and geography of that vast area—so often referred to in the past as Turkistan—traces with keen historical insight how the advent of the maritime age cancelled out much of the importance of central Asia's caravan routes that had served so long as the commercial link between east and west. As the author so clearly explains, the isolation and presumed decline of Turkistan did not in actuality end that vast area's important, if not crucial, role in world events. That expanse of Asia which was the springboard of the Turkish race, a dominion of the Khans, the homeland of Tamerlane and the seat of a renowned Muslim civilization possessed historical forces that were destined inevitably to exert again a strong influence on the course of history.

Tsarist Russia perceived the importance of Turkistan. The result was a long series of rigorous, ruthless and bloody campaigns extending from 1734 until as late as 1920 when Communism completed the Central Asian conquests begun by the Tsars.

It is with both a profound grasp of Turkish history and an excep-

tionally fine literary style that the author relates how bravely the peoples of Central Asia sought to defend themselves against the invading Russian armies. Although eventually defeated, the Turks of Soviet Asia did not forget their traditions of independence and their Islamic orientation. Students of Soviet Russia will find much of interest in Sir Olaf's account of how close the Central Asian Turks came to achieving independence during the critical period of the Russian Revolution. Of particular interest is the story of how Lenin and Stalin wooed those Turkish groups through actually exploiting their desire for independence with promises of independence if the conquered Turks would help overthrow the Tsarist regime. Although the same promise of self determination was carried over into the "Stalin Constitution" of 1936, the peoples of what was Russian Turkistan are still under Soviet control.

The essence of the book seems to be this: the Central Asian Turk's love for freedom still lives in spite of Russian conquest, domination, cantonization and penetration; the Soviets, like their imperial predecessors, are justifiably fearful of a pan-Islamic movement that could touch off the latent fires of nationalism and independence in the Soviet's strategically important southern border areas; and yet, while the hope of Turkish freedom still exists, it would indeed be wrong to underestimate the degree to which the Soviets have, since 1920, moved toward final consolidation of power in Russian Turkistan.

However, the final outcome of Soviet determination to dominate Central Asia is not yet settled, nor can it be settled, according to the author, except by Turkish liberation or their disappearance from the pages of history, for, as Sir Olaf observes, "Never has anyone been able to force a religion or course of action on the Turks."

With good reason it has been said that the West knows less of Soviet Central Asia than any part of the civilized world. Because *Soviet Empire* goes far toward rectifying this western deficiency, this book is one of the most important geopolitical contributions of recent years.

Reviewed by Col J. D. Hittle

Marine Corps Gazette • December, 1954

Crimean "Bighorn" . . .

THE REASON WHY — Cecil Woodham-Smith. 287 pages, maps, illustrations, index and bibliography. New York: McGraw-Hill, 1954. \$4.00

The charge of the Light Brigade carries much the same patriotic and sentimental connotations in British folk history as Custer's last stand does in our own. Each episode included near annihilation of crack cavalry in a forlorn hope; each has been memorialized in song, story and art (though Tennyson's apostrophe to "the noble six hundred" is perhaps a more elevated requiem than Messrs Anheuser-Busch's almost equally celebrated saloon print of Custer's last stand); and each, in the cold afterlight of history, seems to have had its origin in headstrong vanity or insensible ambition.

That this last observation is amply true of the Light Brigade's disastrous charge at Balaclava is proven to the hilt by Mrs. Woodham-Smith's brilliant history, *The Reason Why*, which has had London's military clubs astir ever since its appearance.

The Reason Why, however, is not merely a tactical study, but social history — the story of two noble, immensely wealthy, arrogant military rivals who had the misfortune to be brothers-in-law: Lord Lucan, who ordered the charge and Lord Cardigan, who led it. In recounting this extraordinary history, Mrs. Woodham-Smith gives us a panorama of 19th Century high society in England and Ireland, against which the monstrous rise of Cardigan to senior rank and command at least finds explanation, if hardly justification.

Although the portrayal of Lucan is masterly, I found the vignette of Cardigan even more powerful — by turns stunning and infuriating. To the military reader of this century, Cardigan's ascent, based wholly on wealth and position, would be unbelievable had it not actually happened. Even more unbelievable was Cardigan's repeated, contumacious insubordination toward his seniors, not to speak of the War Office itself. As an example — only one of many — in 1840 Lord Cardigan, then commanding the 11th Hussars, was reprimanded in writing by the

Commander-in-Chief of the Army, General Lord Hill, for having grossly abused a subordinate officer. Certain official amends on the part of Cardigan were peremptorily directed by Lord Hill. Here, in the author's words, is what then took place:

"Lord Cardigan took no notice of Lord Hill's letter, and on December 27 Lord Hill wrote asking for an acknowledgement. Lord Cardigan did not reply. On January 3 Lord Hill wrote a third time desiring to be informed if his instructions had been carried out, but still Lord Cardigan did not reply; and the Commander-in-Chief, apparently helpless, did not write again."

Whew!

So much to suggest the book's setting. Mrs. Woodham-Smith delineates this setting in her first seven



chapters, which I predict will take place beside the work of Lytton Strachey and Philip Guedalla as superbly trenchant 19th Century English history.

The remaining seven chapters are then devoted to the Crimean War, and to the ill fated triangle of British commanders whose names will always be linked with the Balaclava charge: Lucan, Cardigan and Raglan — a trio of whom, at the outbreak of war, the *London Times* revived Chatham's devastating comment 78 years earlier on the British generals appointed to suppress the American Revolution: "I do not know what effect these names have on the enemy, but I confess they make me tremble."

The conduct of the war, let alone its origins, would seem incomprehensible today.

Imagine an invasion force of some 600 transports and support ships — the Anglo-French "amphibious task force" for the descent on the Crimea — being checked midway during final movement to the objective and held at anchor four days off the mouth of the Danube because, again to quote *The Reason Why*:

"The Army had embarked before it was decided where it was going. The Crimea was to be invaded, certainly, but the point at which the invasion was to take place was by no means agreed. Some weeks earlier, Sir George Brown had sailed along the coast of the Crimea and through his field glasses had picked a likely bay, but he was notoriously short-sighted. . . . It was decided that the fleet must wait while the commanders of the French and British armies personally examined the coast."

After such a start, it requires no tax on the reader's credulity to follow the fatal fortunes of the Light Brigade (which Lord Cardigan commanded mainly from his steam yacht, on board which he had a hot bath, then a bottle of champagne with dinner, after miraculously surviving the mortal afternoon of which only 195 officers and troopers out of 700 lived to tell). Mrs. Woodham-Smith's moving account of that charge might well be compared to the battle-paintings by Detaille, France's great military painter of 1870.

In addition to a literary style of the first rank, *The Reason Why* displays scholarship of equal order. The illustrations and maps are adequate, and even the handsome dust-jacket painting itself well bespeaks the vivid and provocative contents of this fine book.

By chance, I have before me a contemporary judgment on the Light Brigade which Mrs. Woodham-Smith, oddly, seems to have missed — two sentences from a letter written the day after Balaclava, by a young infantry officer, who like many others of his arm, had little stomach for the fanfare and strut of the cavalry: "Those fancy fellows in the Cavalry," he wrote home, "got themselves into a pretty pickle yesterday. The entire Army is delighted."

So much for the charge of the Light Brigade.

Reviewed by LtCol R. D. Heinl, Jr.

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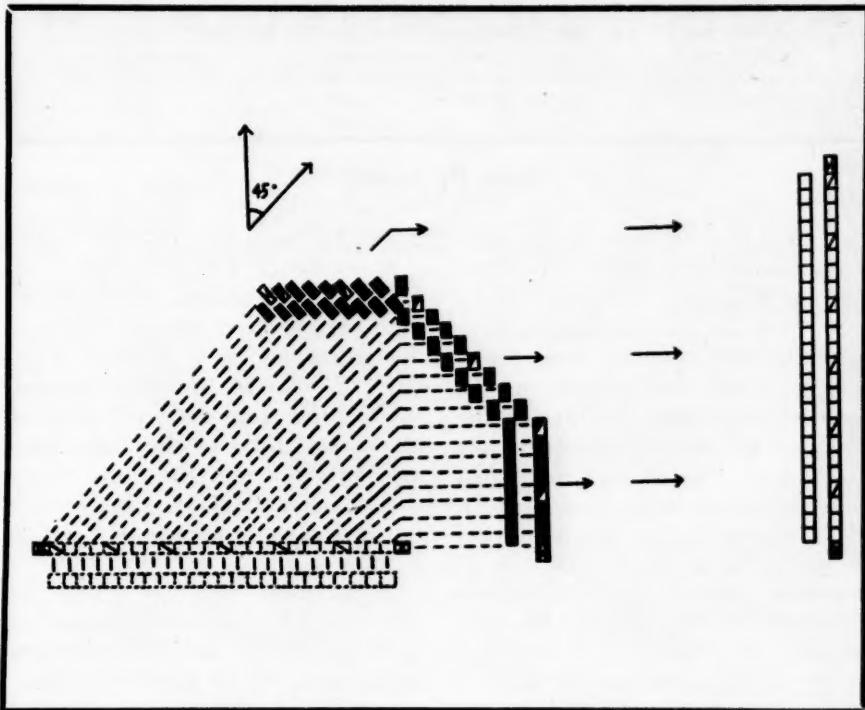
SQUADS RIGHT

Movements for the platoon

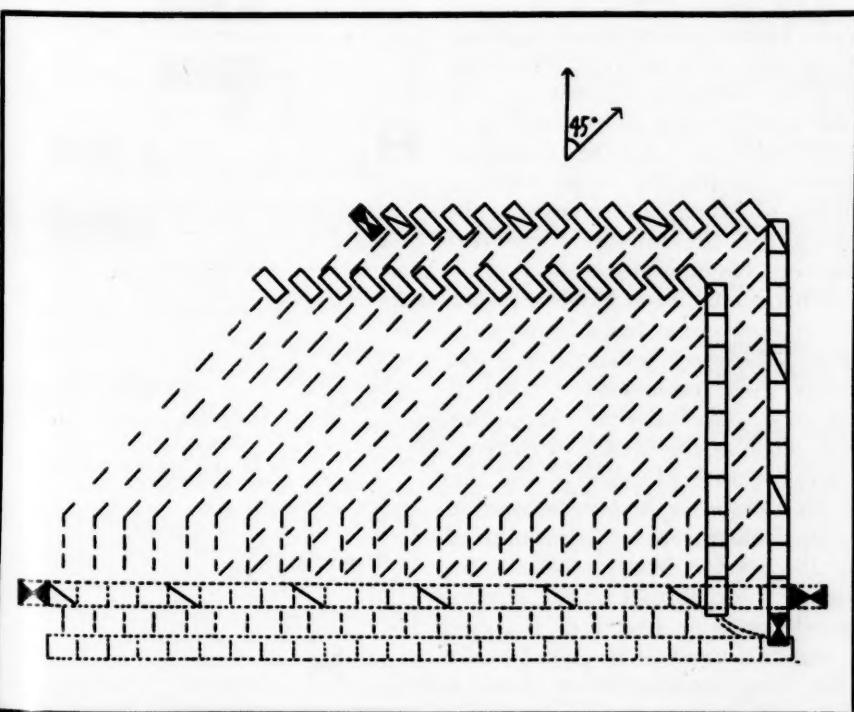
MOVEMENTS FROM LINE — *Platoon Right* — The platoon being in line, to turn the platoon on a fixed pivot, the command is: 1. *Platoon right (left)*, 2. **MARCH**, 3. *Platoon, HALT*, or 3. *Forward*, 4. **MARCH**.

At the command **MARCH**, the right guide steps back, takes post on the flank and marks time. The other front-rank men oblique to the right and, when in rear of their new places on the new line established by the base squad, execute a second right oblique, place themselves on this line abreast of the pivot man and mark time. The other men of the rear rank move straight to the front four paces, oblique to the right, place themselves on the new line established by the rear rank of the base squad, cover their file leaders and mark time.

The command **HALT** or **MARCH**, or the command involving other movements is normally given when the last man arrives on the line except



Platoon Right



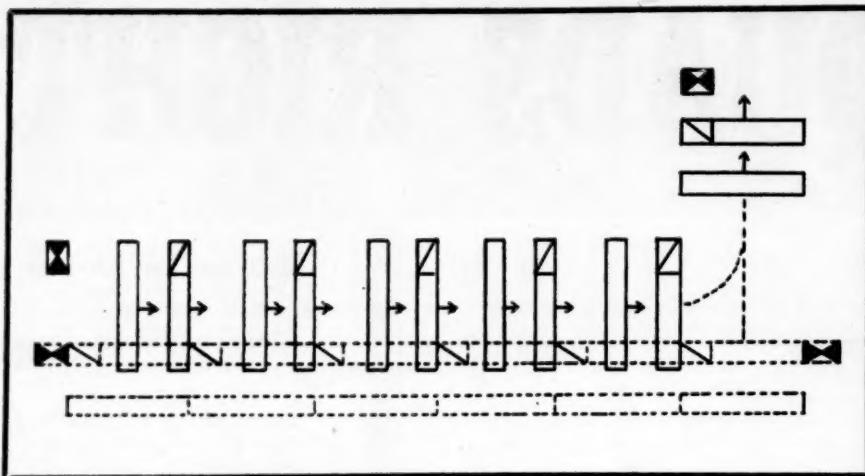
Right Turn

that the command **HALT** may be given at any time after the movement begins. Only those halt who have completed the movement. Each of the others halts upon arriving on the line, aligns himself to the right and executes "Front" without command. Men glance toward the pivot as they arrive on line to maintain alignment.

This movement for the platoon may be compared to "Squads right" for the squad. The movement for the platoon comparable to "Squad right turn" for the squad, follows.

Right Turn — The platoon being on line, to change the direction of the platoon on a moving pivot, the command is: 1. *Right (left) turn*, 2. **MARCH**, 3. *Platoon*, 4. **HALT**, or 3. *Forward*, 4. **MARCH**.

This movement is executed by each rank successively and on the same ground.



Right By Squads

At the command **MARCH**, the right guide faces to the right in marching and takes up the half step. The other men in the rank oblique to the right until opposite their places in line when they oblique to the right a second time. All take up the half step on arriving abreast of the pivot man. Each rear-rank man obliques on the same ground as his file leader and men glance toward the pivot as they arrive on line to maintain alignment. The fourth command is given so that the halt or other movement will be executed as the last man arrives on line.

*To form a column of squads to the flank (the platoon being in line) the command is: 1. *Squads right (left)*, 2. **MARCH**, 3. **Platoon**, 4. **HALT**. The file closers take post on the pivot flank abreast of and four inches from the nearest rank.*

*To form a column of squads and march to the rear (being in line) the command is: 1. *Squads right (left)*, *column right (left)*, 2. **MARCH**. The right squad initiates "column right" as soon as it has completed the "squad right."*

Right by Squads—To form a column of squads from line and march to the front the command is: 1. *Right (left) by squads*, 2. **MARCH**. At the command, **MARCH**, the right squad marches forward taking four full steps, then eight half steps and then resumes the full step. The remainder of the platoon executes *Squads right, column left*, and follows the right squad. The right guide marches on the right flank of the right squad until four steps have been taken, when he moves by the left oblique and takes post in front

of the left flank file.

Movements from columns of squads—The platoon being in column of squads, to change direction the command is: 1. *Column right (left)*, 2. **MARCH**. At the command **MARCH**, the front rank of the leading squad turns to the right on a moving pivot and the other ranks, without command turn successively on the same ground and in a similar manner.

Right front into line. The platoon being in a column of squads, to form in line to the front the command is 1. *Right front into line*, 2. **MARCH**, 3. **Platoon**, 4. **HALT**, 5. **FRONT** (from the automatic dress of each squad independently).

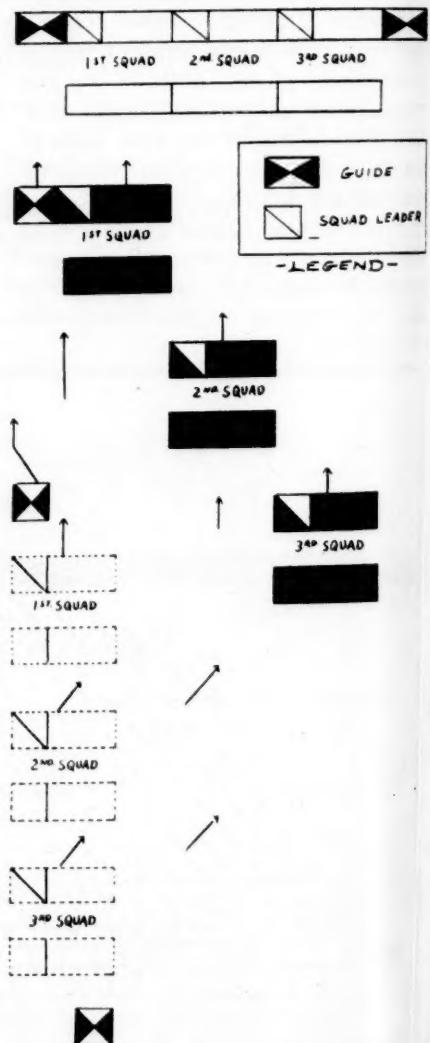
At the initial command, the squad leader of the leading squad, if halted, commands: *Forward*. If marching he gives *Continue the march*. The leaders of squads in the rear give *Right oblique*. At the command **MARCH**, the leading squad executes "Forward March," or continues the march and the squads in the rear execute "Right oblique."

The command **HALT** is given when the leading squad has advanced the desired distance. It halts. Its squad leader then commands: 1. *Left*, 2. *DRESS* (automatically at close interval). Each of the squads in the rear, when opposite its place in the line by an oblique to the left, resumes its original direction at the command of the squad leader. When the squads come abreast of the leading squad halted on line, each is halted at the command of its squad leader who then commands: 1. *Left*, 2. *DRESS*. All dress on the first squad in the line. All squads hold the dress

until the platoon leader dresses up the individual squads on line and commands, **FRONT**.

Movements to the rear, the platoon being in line, or column of squads, to face or march to the rear, the command is: 1. *Squads right (left) about*, 2. **MARCH**, or 1. *Squads right (left) about*, 2. **MARCH**, 3. **Platoon**, 4. **HALT**. The movement is executed by each squad as prescribed (Oct '54 GAZETTE). If in line, each file closer darts through the nearest interval and takes post. To march to the rear for a few paces the command is 1. *About*, 2. **FACE**, (3. *At trail*), 4. *Forward*, 5. **MARCH**, 6. **Platoon**, 7. **HALT**. If in line, the guides place themselves in the rear rank, now the front rank. The file closers, on facing about, maintain their relative positions. No other movement is executed until the line is faced to the original front.

US MC



Right Front Into Line

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